上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Khaki

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Khaki)*
Synonyms	*—*
CAS NO.	*—*
EC NO.	*—*
Chemical Formula	*—*

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	*—*

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Continued...

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.6358-69-6 2.228-783-6 3.Not Available 4.Not Available	1.5	**Solvent Green 7**	Not Classified	Not Applicable	Not Applicable
1.1934-21-0 2.217-699-5 3.Not Available 4.Not Available	4.5	**Acid Yellow 23**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	84.0	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.

Continued...

2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment

Continued...

Glycerol	*Inhalation 220 mg/m³ (Local, Chronic)* *Inhalation 132 mg/m³ (Local, Chronic) **	*0.885mg/L (Water (Fresh))* *0.088 mg/L (Water - Intermittent release)* *8.85 mg/L (Water (Marine))* *3.3 mg/kg sediment dw (Sediment (Fresh Water))* *0.33 mg/kg sediment dw (Sediment (Marine))* *1000 mg/L (STP)* *0.141mg/kg soil dw (Soil)*
Solvent Green 7	*Inhalation 16.4 mg/m³ (Local, Chronic)* *Dermal 0.03 mg/kg bw/day (Systemic, Chronic)* *Inhalation 2.9 mg/m³ (Local, Chronic)** *Dermal 0.0357 mg/kg bw/day (Systemic, Chronic)**	*0.1 mg/L (Water (Fresh))* *1 mg/L (Water - Intermittent release)* *0.01 mg/L (Water (Marine))* *2.06 mg/kg sediment dw (Sediment (Fresh Water))* *0.206 mg/kg sediment dw (Sediment (Marine))* *0.353 mg/kg soil dw (Soil)*
Acid yellow 23	*Inhalation 372.52 mg/m³ (Systemic, Chronic)* *Dermal 52.82 mg/kg bw/day (Systemic, Chronic)* *Inhalation 91.86 mg/m³ (Systemic, Chronic)** *Dermal 26.41 mg/kg bw/day (Systemic, Chronic)** *Oral 26.41 mg/kg bw/day (Systemic, Chronic)**	*0.12 mg/L (Water (Fresh))* *1.2 mg/L (Water - Intermittent release)* *0.012 mg/L (Water (Marine))* *10 mg/L (STP)* *469.92 µg/kg sediment dw (Sediment (Fresh Water))* *46.992 µg/kg sediment dw (Sediment (Marine))* *23.53 µg/kg soil dw (Soil)*

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- ***Ingredient data***

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	*Belgium*	*10mg/m³*	*Not data available*
	VLEP (France)	*10mg/m³*	*Not data available*
	WELs(UK)	*10mg/m³*	*Not data available*
	Finland	*20mg/m³*	*Not data available*
	AGS(Germany)	*200mg/m³ [1]*	*400mg/m³ [1][2]*
	DFG(Germany)	*200mg/m³ [1]*	*400mg/m³ [1][2]*
	Ireland	*10mg/m³*	*Not data available*
	Poland	*10mg/m³*	*Not data available*
	Spain	*10mg/m³*	*Not data available*
	Switzerland	*50mg/m³inhalable aerosol*	*100mg/m³inhalable aerosol*

Remarks: *1. Inhalable fraction 2.15 minutes average value*

- ***Emergency Limits***

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	*45mg/m³*	*180mg/m³*	*1100mg/m³*

8.2 Engineering controls

General protective and hygienic measures	*The usual precautionary measures are to be adhered to when handling chemicals.*

8.3 Personal protection equipment

General requirement	
Eye protection	*Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).*
Hand protection	*Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.*
Respiratory protection	*Not required under normal conditions of use.*
Skin and body protection	*Not required under normal conditions of use.*
Other protection	*No special equipment needed when handling small quantities.*

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Continued...

Appearance	*Khaki*	***Viscosity***	***Dynamic***	*Not determined*
Physical state	*Liquid*		***Kinematic:***	*Not determined*
Odour	*Odourless*	***Vapour density (Air = 1)***		*Not determined*
Odour threshold	*Not determined*	***Density/Relative density***		*Not determined*
pH (as supplied)	*Not determined*	***Decomposition temperature***		*Not determined*
Melting point/freezing point(°C)	*Not determined*	***Particle Size***		*Not determined*
Flash point(Closed cup,°C)	*Not determined*	***Vapour pressure (kPa)***		*Not determined*
Flammability	*Not flammable liquid*	***Relative vapor density***		*Not determined*
Evaporation rate	*Not determined*	***Partition coefficient n-octanol/ water***		*Not determined*
Upper Explosive Limit (%)	*Not determined*	***Auto-ignition temperature(°C)***		*Not determined*
Lower Explosive Limit (%)	*Not determined*	***Explosive properties***		*Product does not present anexplosion hazard*
Self-igniting	*Not determined*	***Oxidising properties***		*Not determined*
Taste	*Not determined*	***Surface Tension (dyn/cm or mN/m)***		*Not determined*
Volatile Component (%vol)	*Not determined*	***Gas group***		*Not determined*
pH as a solution (1%)	*Not determined*	***VOC g/L***		*Not determined*

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	*No further relevant information available.*
Chemical stability	*Stable under proper operation and storage conditions.*
Possibility of hazardous reactions	*No dangerous reactions known.*
Conditions to avoid	*No further relevant information available.*
Incompatible materials	*No further relevant information available.*
Hazardous decomposition products	*No dangerous decomposition products known.*

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	*The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.*
Ingestion	*The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.*
Skin Contact	*The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.*
Eye	*Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).*
Chronic	*Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.*

Water based dye ink	***TOXICITY***	***IRRITATION***
	No data available	*No data available*
Glycerol	***TOXICITY***	***IRRITATION***
	Oral (rat) LD50:> 11500 mg/kg *Inhalation(rat) LC50: > 5.85mg/l 4h* *Dermal (guinea pig) LD50: 45 ml/kg*	*Skin (rabbit):non-irritating(Draize)* *Eye (rabbit):non-irritating (Draize)*

Continued...

Solvent green7	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>2000 mg/kg Dermal (rat) LD50:>2000 mg/kg	Eye:no adverse effect observed (not irritating)(Draize) Skin:no adverse effect observed (not irritating)(Draize)
Acid yellow 23	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>1000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

11.2 Carcinogenicity

Component	Cas No.	IARC
Glycerol	56-81-5	Not listed
Solvent green 7	6358-69-6	Not listed
Acid yellow 23	1934-21-0	Not listed
Water	7732-18-5	Not listed

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	No data available	No data available	No data available	No data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/l
	EC50	48h	Aquatic invertebrates	1955mg/l
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/l
Solvent Green 7	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	100 mg/l
	EC50	48h	Aquatic invertebrates	100-500 mg/l
	NOEC	48h	Aquatic invertebrates	100 mg/l
	EC50	168h	Aquatic plants other than algae	100 mg/l
	NOEC	168h	Aquatic plants other than algae	100 mg/l
Acid yellow 23	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	>125 mg/l
	EC50	48h	Aquatic invertebrates	>125 mg/l

Continued...

	EC50	72h	Aquatic algae and cyanobacteria	>125 mg/l
	BCF	1008h	Fish	<=0.29 l/kg(conc.600pbb)
	BCF	1008h	Fish	<=3 l/kg(conc.60pbb)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Solvent green7	6358-69-6	Inherently biodegradable
Acid yellow 23	1934-21-0	Not readily biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244 - 0.046
Solvent green7	6358-69-6	Potential for a low bioaccumulation	BCF=3.162
Acid yellow 23	1934-21-0	No potential for bioaccumulation	LogKow=-1.572

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
Solvent green7	6358-69-6	Koc=169.82
Acid yellow 23	1934-21-0	Koc=0

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable
vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1.Do not allow wash water from cleaning or process equipment to enter drains. 2.It may be necessary to collect all wash water for treatment before disposal. 3.Recycle wherever possible. 4.Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.2 UN proper shipping name

Continued...

ADR/RID/ADN, IMDG	*Not Applicable*
IATA	*Not Applicable*

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	*Not Applicable*
Class	*Not Applicable*
Label	*Not Applicable*

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	*Not Applicable*

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

UN "Model Regulation"	*Not Applicable*

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	*None of the ingredients is listed*
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	*None of the ingredients is listed.*
REACH Regulation Annex XVII Restriction	*None of the ingredients is listed.*
REACH Regulation Annex XIV Authorization List	*None of the ingredients is listed.*

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	***EINECS***	***TSCA***	***DSL***	***IECSC***	***NZIoC***	***PICCS***	***KECI***	***AICS***
Glycerol	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***
Solvent green7	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***
Acid yellow 23	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***
Water	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***	***Listed***

【EINECS】 *European Inventory of Existing Commercial Chemical Substances*

【TSCA】 *United States Toxic Substances Control Act Inventory*

【DSL】 *Canadian Domestic Substances List*

【IECSC】 *China Inventory of Existing Chemical Substances*

【NZIoC】 *New Zealand Inventory of Chemicals*

【PICCS】 *Philippines Inventory of Chemicals and Chemical Substances*

【KECI】 *Existing and Evaluated Chemical Substances*

【AICS】 *Australia Inventory of Chemical Substances*

Continued...

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Light Pink

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Light Pink)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Continued...

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.9003-39-8 2.Not Available 3.Not Available 4.Not Available	1.0	**Polyvinyl pyrrolidone**	Not Classified	Not Applicable	Not Applicable
1.3520-42-1 2.222-529-8 3.Not Available 4.Not Available	0.5	**C.I.Acid Red 52**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	88.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.

Continued...

2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment

Continued...

Glycerol	*Inhalation 220 mg/m³ (Local, Chronic)* *Inhalation 132 mg/m³ (Local, Chronic) **	*0.885mg/L (Water (Fresh))* *0.088 mg/L (Water - Intermittent release)* *8.85 mg/L (Water (Marine))* *3.3 mg/kg sediment dw (Sediment (Fresh Water))* *0.33 mg/kg sediment dw (Sediment (Marine))* *1000 mg/L (STP)* *0.141mg/kg soil dw (Soil)*

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

➢ **Ingredient data**

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	*Belgium*	*10mg/m³*	*Not data available*
	VLEP (France)	*10mg/m³*	*Not data available*
	WELs(UK)	*10mg/m³*	*Not data available*
	Finland	*20mg/m³*	*Not data available*
	AGS(Germany)	*200mg/m³ [1]*	*400mg/m³ [1][2]*
	DFG(Germany)	*200mg/m³ [1]*	*400mg/m³ [1][2]*
	Ireland	*10mg/m³*	*Not data available*
	Poland	*10mg/m³*	*Not data available*
	Spain	*10mg/m³*	*Not data available*
	Switzerland	*50mg/m³inhalable aerosol*	*100mg/m³inhalable aerosol*

Remarks: *1. Inhalable fraction 2.15 minutes average value*

➢ **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	*45mg/m³*	*180mg/m³*	*1100mg/m³*
Polyvinyl pyrrolidone	*51mg/m³*	*560mg/m³*	*20000mg/m³*

8.2 Engineering controls

General protective and hygienic measures	*The usual precautionary measures are to be adhered to when handling chemicals.*

8.3 Personal protection equipment

General requirement	
Eye protection	*Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).*
Hand protection	*Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.*
Respiratory protection	*Not required under normal conditions of use.*
Skin and body protection	*Not required under normal conditions of use.*
Other protection	*No special equipment needed when handling small quantities.*

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	*Light Pink*	**Viscosity**	**Dynamic**	*Not determined*
Physical state	*Liquid*		**Kinematic:**	*Not determined*
Odour	*Odourless*	**Vapour density (Air = 1)**		*Not determined*
Odour threshold	*Not determined*	**Density/Relative density**		*Not determined*
pH (as supplied)	*Not determined*	**Decomposition temperature**		*Not determined*
Melting point/freezing point(°C)	*Not determined*	**Particle Size**		*Not determined*
Flash point(Closed cup,°C)	*Not determined*	**Vapour pressure (kPa)**		*Not determined*

Continued...

Flammability	Not flammable liquid	**Relative vapor density**	Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**	Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**	Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**	Not determined
Taste	Not determined	**Surface Tension (dyn/cm or mN/m)**	Not determined
Volatile Component (%vol)	Not determined	**Gas group**	Not determined
pH as a solution (1%)	Not determined	**VOC g/L**	Not determined

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No further relevant information available.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	No dangerous decomposition products known.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Water based dye ink	**TOXICITY**	**IRRITATION**
	No data available	No data available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg[1] Inhalation(rat) LC50: > 5.85mg/L 4h[1] Dermal (guinea pig) LD50: 45 ml/kg[1]	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
C.I.Acid Red 52	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Polyvinyl pyrrolidone	**TOXICITY**	**IRRITATION**
	Oral(mouse) LD50:100000mg/kg[2]	No data available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.Value obtained from manufacturer's SDS.	

11.2 Carcinogenicity

Component	Cas No.	IARC
Glycerol	56-81-5	Not listed
Water	7732-18-5	Not listed
C.I.Acid red 52	3520-42-1	Not listed
Polyvinylpyrrolidone	9003-39-8	Category 3

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	Endpoint	Test Duration (hr)	Species	Value
	No data available	No data available	No data available	No data available
Glycerol	Endpoint	Test Duration (hr)	Species	Value
	LC50	96h	Fish	54000 mg/L
	EC50	48h	Aquatic invertebrates	1955mg/L
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/L
C.I.Acid red 52	Endpoint	Test Duration (hr)	Species	Value
	EC50	48h	Aquatic invertebrates	120 mg/L
	EC50	168h	Aquatic plants other than algae	1000 mg/L
	EC10	168h	Aquatic plants other than algae	161.6-1000 mg/L
	BCF	672h	Fish	<=0.57 l/kg(conc.1690μg/L)
	BCF	672h	Fish	<=5.3 l/kg(conc.169μg/L)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
C.I.Acid red 52	3520-42-1	Not readily biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244 - 0.046
C.I.Acid red 52	3520-42-1	No data available	LogKow=-2.2

12.4 Mobility in soil

Continued...

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
C.I.Acid red 52	3520-42-1	No data available

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable
vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1.Do not allow wash water from cleaning or process equipment to enter drains. 2.It may be necessary to collect all wash water for treatment before disposal. 3.Recycle wherever possible. 4.Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Applicable
IATA	Not Applicable

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Applicable
Class	Not Applicable
Label	Not Applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

Continued...

UN "Model Regulation"	Not Applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed.
REACH Regulation Annex XVII Restriction	None of the ingredients is listed.
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Red 52	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Polyvinyl pyrrolidone	Not Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

Continued...

GHS: *Globally Harmonised System of Classification and Labelling of Chemicals*

EINECS: *European Inventory of Existing Commercial Chemical Substances*

NOEC: *No Observed Effect Concentration*

BCF*: BioConcentration Factors*

ELINCS: *European List of Notified Chemical Substances*

DNEL: *Derived No-Effect Level (REACH)*

PNEC: *Predicted No-Effect Concentration (REACH)*

LC50: *Lethal concentration, 50 percent*

LD50: *Lethal dose, 50 percent*

PBT: *Persistent, Bioaccumulative and Toxic*

vPvB: *very Persistent and very Bioaccumulative*

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Light purple

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Light purple)*
Synonyms	*—*
CAS NO.	*—*
EC NO.	*—*
Chemical Formula	*—*

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	*—*

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Continued...

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2650-18-2 2.220-168-0 3.Not Available 4.Not Available	1.5	**C.I.Acid Blue 9**	Not Classified	Not Applicable	Not Applicable
1.9003-39-8 2.Not Available 3.Not Available 4.Not Available	1.0	**Polyvinyl pyrrolidone**	Not Classified	Not Applicable	Not Applicable
1.3520-42-1 2.222-529-8 3.Not Available 4.Not Available	1.0	**C.I.Acid Red 52**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	2.0	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	84.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

Continued...

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)
C.I.Acid Blue 9	Inhalation 88.3mg/m³(Systemic, Chronic) Dermal 17.67 mg/kg bw/day (Systemic, Chronic) Dermal 6.31 mg/kg bw/day (Systemic, Chronic)* Inhalation 19 mg/m³(Systemic, Chronic)* Oral 6.31mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 0.1 mg/L (Marine Water - Intermittent release) 0.363 mg/kg sediment dw (Sediment (Fresh Water)) 0.0363 mg/kg sediment dw (Sediment (Marine)) 1mg/kg soil dw (Soil) 10 mg/L (STP)

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- **Ingredient data**

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	Belgium	10mg/m³	Not data available
	VLEP (France)	10mg/m³	Not data available
	WELs(UK)	10mg/m³	Not data available
	Finland	20mg/m³	Not data available
	AGS(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	DFG(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	Ireland	10mg/m³	Not data available
	Poland	10mg/m³	Not data available
	Spain	10mg/m³	Not data available
	Switzerland	50mg/m³inhalable aerosol	100mg/m³inhalable aerosol

Remarks: *1. Inhalable fraction 2.15 minutes average value*

- **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
C.I.Acid Blue 9	30mg/m³	330mg/m³	2000mg/m³
Polyvinyl pyrrolidone	51mg/m³	560mg/m³	20000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	Not required under normal conditions of use.
Skin and body protection	Not required under normal conditions of use.

Continued...

Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Light purple	**Viscosity**	**Dynamic**	Not determined
Physical state	Liquid		**Kinematic:**	Not determined
Odour	Odourless	**Vapour density (Air = 1)**		Not determined
Odour threshold	Not determined	**Density/Relative density**		Not determined
pH (as supplied)	Not determined	**Decomposition temperature**		Not determined
Melting point/freezing point(°C)	Not determined	**Particle Size**		Not determined
Flash point(Closed cup,°C)	Not determined	**Vapour pressure (kPa)**		Not determined
Flammability	Not flammable liquid	**Relative vapor density**		Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**		Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**		Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**		Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**		Not determined
Taste	Not determined	**Surface Tension (dyn/cm or mN/m)**		Not determined
Volatile Component (%vol)	Not determined	**Gas group**		Not determined
pH as a solution (1%)	Not determined	**VOC g/L**		Not determined

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No further relevant information available.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	No dangerous decomposition products known.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Continued...

Water based dye ink	**TOXICITY**	**IRRITATION**
	No data available	No data available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg[1] Inhalation(rat) LC50: > 5.85mg/L 4h[1] Dermal (guinea pig) LD50:45 ml/kg[1]	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
C.I.Acid Red 52	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Polyvinyl pyrrolidone	**TOXICITY**	**IRRITATION**
	Oral(mouse) LD50:100000mg/kg[2]	No data available
C.I.Acid Blue 9	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >1900 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.Value obtained from manufacturer's SDS.	

11.2 Carcinogenicity

Component	Cas No.	IARC
Acid Red 18	2611-82-7	Not listed
Glycerol	56-81-5	Not listed
Water	7732-18-5	Not listed
C.I.Acid red 52	3520-42-1	Not listed
C.I.Acid Blue 9	2650-18-2	Not listed
Polyvinylpyrrolidone	9003-39-8	Category 3

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	No data available	No data available	No data available	No data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**

Continued...

	LC50	96h	Fish	54000 mg/L
	EC50	48h	Aquatic invertebrates	1955mg/L
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/L
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	NOEC	168h	Aquatic plants other than algae	100 mg/L
	EC50	48h	Aquatic invertebrates	>100 mg/L
	EC0	48h	Aquatic invertebrates	100 mg/L
	LC50	96h	Fish	>1000 mg/L
	BCF	672h	Fish	<=0.55 l/kg(conc.0.474mg/L)
	BCF	672h	Fish	<=5.6 l/kg(conc.0.0474mg/L)
C.I.Acid red 52	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	EC50	48h	Aquatic invertebrates	120 mg/L
	EC50	168h	Aquatic plants other than algae	1000 mg/L
	EC10	168h	Aquatic plants other than algae	161.6-1000 mg/L
	BCF	672h	Fish	<=0.57 l/kg(conc.1690μg/L)
	BCF	672h	Fish	<=5.3 l/kg(conc.169μg/L)
C.I.Acid Blue 9	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	>100 mg/L
	EC50	48h	Aquatic invertebrates	>100 mg/L
	NOEC	504h	Aquatic invertebrates	10000 mg/L
	EC50	168h	Aquatic plants other than algae	200 mg/L
	EC10	168h	Aquatic plants other than algae	12.5 mg/L

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Acid red 18	2611-82-7	Not readily biodegradable in water
C.I.Acid red 52	3520-42-1	Not readily biodegradable in water
C.I.Acid Blue 9	2650-18-2	Not ready biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244 - 0.046
Acid red 18	2611-82-7	No potential for bioaccumulation	LogKow=-2.267
C.I.Acid red 52	3520-42-1	No data available	LogKow=-2.2
C.I.Acid Blue 9	2650-18-2	Potential for a low bioaccumulation	LogKow=-3

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
Acid red 18	2611-82-7	Koc=3.16
C.I.Acid red 52	3520-42-1	No data available
C.I.Acid Blue 9	2650-18-2	No data available

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable

Continued...

vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1.Do not allow wash water from cleaning or process equipment to enter drains. 2.It may be necessary to collect all wash water for treatment before disposal. 3.Recycle wherever possible. 4.Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Applicable
IATA	Not Applicable

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Applicable
Class	Not Applicable
Label	Not Applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

UN "Model Regulation"	Not Applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU

Continued...

Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed.
REACH Regulation Annex XVII Restriction	None of the ingredients is listed.
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Red 52	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Polyvinyl pyrrolidone	Not Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Blue 9	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

Continued...

DNEL: *Derived No-Effect Level (REACH)*

PNEC: *Predicted No-Effect Concentration (REACH)*

LC50: *Lethal concentration, 50 percent*

LD50: *Lethal dose, 50 percent*

PBT: *Persistent, Bioaccumulative and Toxic*

vPvB: *very Persistent and very Bioaccumulative*

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink

Version：1.1

Creation Date：2022/09/05

Revision Date：2022/09/05

Color: orange

Country of Destination：EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Highlighter ink(orange)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

Not Applicable

SECTION 3 Composition/information on ingredients

3.1 Mixtures

➢ **Description：** Mixture of substances listed below with nonhazardous additions.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.6358-69-6 2.228-783-6 3.Not Available 4.Not Available	0.5-2.0	**Solvent Green 7**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	0.5-1.5	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.35773-43-4 2.252-722-2 3.Not Available 4.Not Available	1.5-3.0	**3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	78.5-82.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable forsurrounding area.
Unsuitable extinguishing media	There is no restriction on the type ofextinguisher which may be used.

5.2 Special hazards arising from the substrate or mixture

No further relevant information available.

5.3 Advice for firefighters

1	Wear fully protective suit and mouth respiratory protective device.
2	Prevent fire extinguishing water from contaminating surface water or the ground water system.
3	Fight fire from a safe distance, with adequate cover.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.
5	For the general occupational hygienic measures refer to section 8.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.
Information about storage in one common storage facility	Store away from foodstuffs.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment

Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
Solvent Green 7	Inhalation 16.4 mg/m³ (Local, Chronic) Dermal 0.03 mg/kg bw/day (Systemic, Chronic) Inhalation 2.9 mg/m³ (Local, Chronic)* Dermal 0.0357 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 2.06 mg/kg sediment dw (Sediment (Fresh Water)) 0.206 mg/kg sediment dw (Sediment (Marine)) 0.353 mg/kg soil dw (Soil)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- **Ingredient data**

Ingredient	Source	TWA	STEL	Peak
Glycerol, mist	AGS (Germany)	200 mg/m³[1]	400mg/m³[1][2]	Not Available
	DFG(Germany)	200 mg/m³[1]	400mg/m³[1][2]	Not Available
	MAK(Germany)	200I mg/m³	Not Available	I(2)
	VLEP (France)	10 mg/m³	Not Available	Not Available
	WELs(UK)	10 mg/m³	Not Available	Not Available

Remarks: *1..Inhalable fraction 2. 15 minutes average value*

- **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	No special requirements.
Skin and body protection	No special requirements.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Orange	**Viscosity**	**Dynamic**	Not Available
Physical state	Liquid		**Kinematic:**	Not Available
Odour	Odourless	**Vapour density (Air = 1)**		Not Available
Odour threshold	Not Available	**Density/Relative density**		Not Available

Continued...

pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point/freezing point(°C)	Not Available	**Particle Size**	Not Available
Flash point(Closed cup,°C)	Not Available	**Vapour pressure (kPa)**	Not Available
Flammability	Not Available	**Relative vapor density**	Not Available
Evaporation rate	Not Available	**Partition coefficient n-octanol/ water**	Not Available
Upper Explosive Limit (%)	Not Available	**Auto-ignition temperature(°C)**	Not Available
Lower Explosive Limit (%)	Not Available	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not Available	**Oxidising properties**	Not Available
Taste	Not Available	**Surface Tension (dyn/cm ormN/m)**	Not Available
Volatile Component (%vol)	Not Available	**Gas group**	Not Available
pH as a solution (1%)	Not Available	**VOC g/L**	Not Available

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Solvent Green 7	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:15000 mg/kg Dermal (guinea pig) LD50: 2000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

Continued...

Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
3-(5-chlorobenzoxazol-2-yl)-4-7-(diethylamino)-2-5-Benzopyrone	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>5000 mg/kg	No data available

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
Solvent Green 7	6358-69-6	Not Listed	Not Listed
Acid Red 18	2611-82-7	Not Listed	Not Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

11.2.1 Endocrine Disruption Properties

Not Available

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	885mg/l	1
	EC50	24h	Crustacea	10000mg/l	2
	EC50	72h	Algae or other aquatic plants	2.9mg/l	4
Solvent Green 7	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	NOEC	48h	Crustacea	100 mg/l	2
	LC50	96h	Fish	100 mg/l	2
	EC50	48h	Crustacea	100-500 mg/l	2
	EC50	168h	Algae or other aquatic plants	100 mg/l	2
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	NOEC	168h	Aquatic plants other than algae	100 mg/l	2
	EC50	48h	Crustacea	100 mg/l	2
	EC0	48h	Crustacea	100 mg/l	2

Continued...

	LC50	96h	Fish	1000 mg/l	2
	BCF	672h	Fish	<=0.55 l/kg	7
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data				

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
Glycerol	56-81-5	High	Low
Solvent Green 7	6358-69-6	Middling	Low
Acid Red 18	2611-82-7	Low	Low

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	Low	Log Kow=-1.76
Solvent Green 7	6358-69-6	Low	Log Kow<=3
Acid Red 18	2611-82-7	Low	BCF<=0.55

12.4 Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Glycerol	56-81-5	High	Koc=23.74
Solvent Green 7	6358-69-6	Middling	Koc=3.313 ± 0.007
Acid Red 18	2611-82-7	High	Koc=3.16

12.5 Results of PBT and vPvB assessment

PBT	Not Available
vPvB	Not Available

12.6 Endocrine Disruption Properties

Not Available

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Available

14.2 UN proper shipping name

Continued...

ADR/RID/ADN, IMDG	Not Available
IATA	Not Available

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Available
Class	Not Available
Label	Not Available

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Available

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available
Stowage Category	Not Available

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation(06/10/2022)	None of the ingredients is listed
REACH Regulation Annex XVII Restriction(11/09/2021)	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List(04/11/2022)	None of the ingredients is listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Solvent Green 7	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid Red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/09/05
Revision Date	2022/09/05
Reason for revision	——

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas: Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF:BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB:very Persistent and very Bioaccumulative

16.3 Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference.Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink

Version：1.1

Creation Date：2022/09/05

Revision Date：2022/09/05

Color: pink

Country of Destination：EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Highlighter ink (pink)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Mixtures

- **Description**：Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2650-18-2 2.220-168-0 3.Not Available 4.Not Available	0.5-1.5	**C.I.Acid Blue 9**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	1.0-4.0	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.35773-43-4 2.252-722-2 3.Not Available 4.Not Available	0.5-1.0	**3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	78.5-83.0	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable forsurrounding area.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritant vapor in air under fire.

5.3 Advice for firefighters

Continued...

1	Wear fully protective suit and mouth respiratory protective device.
2	Prevent fire extinguishing water from contaminating surface water or the ground water system.
3	Fight fire from a safe distance, with adequate cover.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.Keep containers tightly closed .
Information about storage in one common storage facility	Store away from food stuff containers.Separated from strong oxidants and strong acids.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment

Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
C.I.Acid Blue 9	Inhalation 88.3mg/m³(Systemic, Chronic) Dermal 17.67 mg/kg bw/day (Systemic, Chronic) Dermal 6.31 mg/kg bw/day (Systemic, Chronic)* Inhalation 19 mg/m³(Systemic, Chronic)* Oral 6.31mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 0.1 mg/L (Marine Water - Intermittent release) 0.363 mg/kg sediment dw (Sediment (Fresh Water)) 0.0363 mg/kg sediment dw (Sediment (Marine)) 1mg/kg soil dw (Soil) 10 mg/L (STP)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- **Ingredient data**

Ingredient	Source	TWA	STEL	Peak
Glycerol, mist	AGS (Germany)	200 mg/m³[1]	400mg/m³[1][2]	Not data available
	DFG(Germany)	200 mg/m³[1]	400mg/m³[1][2]	Not data available
	MAK(Germany)	200I mg/m³	Not data available	I(2)
	VLEP (France)	10 mg/m³	Not data available	Not data available
	WELs(UK)	10 mg/m³	Not data available	Not data available

Remarks: 1..Inhalable fraction 2. 15 minutes average value

- **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
C.I.Acid Blue 9	30mg/m³	330mg/m³	2000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	No special requirements.
Skin and body protection	No special requirements.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Pink	**Viscosity**	**Dynamic**	Not Available
Physical state	Liquid		**Kinematic:**	Not Available
Odour	Odourless	**Vapour density (Air = 1)**		Not determined

Continued...

Odour threshold	Not determined	**Density/Relative density**	Not determined
pH (as supplied)	Not determined	**Decomposition temperature**	Not determined
Melting point/freezing point(°C)	Not determined	**Particle Size**	Not determined
Flash point(Closed cup,°C)	Not determined	**Vapour pressure (kPa)**	Not determined
Flammability	Not flammable liquid	**Relative vapor density**	Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**	Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**	Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**	Not determined
Taste	Not determined	**Surface Tension (dyn/cm ormN/m)**	Not determined
Volatile Component (%vol)	Not determined	**Gas group**	Not determined
pH as a solution (1%)	Not determined	**VOC g/L**	Not determined

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink	**TOXICITY**	**IRRITATION**
	Not data available	Not data available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
C.I.Acid Blue 9	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >1900 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

Continued...

Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
3-(5-chlorobenzoxazol-2-yl)-4-7-(diethylamino)-2-5-Benzopyrone	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>5000 mg/kg	No data available

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
C.I.Acid Blue 9	2650-18-2	Not Listed	Not Listed
Acid Red 18	2611-82-7	Not Listed	Not Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	Not data available	Not data available	Not data available	Not data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/l
	EC50	24h	Aquatic invertebrates	10000 mg/l
	NOEC	168h	Aquatic invertebrates	800 mg/l
	EC50	192h	Aquatic algae and cyanobacteria	2900 mg/l
C.I.Acid Blue 9	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	NOEC	504h	Aquatic invertebrates	>10mg/l
	LC50	96h	Fish	>100mg/l
	EC50	48h	Aquatic invertebrates	>100mg/l
	EC50	504h	Aquatic algae and cyanobacteria	>200mg/l
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	1000 mg/l

Continued...

	EC50	48h	Aquatic invertebrates	100 mg/l
	NOEC	168h	Aquatic plants other than algae	100 mg/l
	BCF	672h	Fish	<=0.55 l/kg(conc.474mg/l)
	BCF	672h	Fish	<=5.6 l/kg(conc.47.4mg/l)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
C.I.Acid Blue 9	2650-18-2	Not ready biodegradable
Acid Red 18	2611-82-7	Not readily biodegradable

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	Potential for a low bioaccumulation	Log Kow=-1.75
Acid Red 18	2611-82-7	Potential for a low bioaccumulation	Log Kow=-2.267
C.I.Acid Blue 9	2650-18-2	Potential for a low bioaccumulation	Log Kow=-3
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not data available.	Log Kow=4.9

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
Acid Red 18	2611-82-7	Koc=3.16
C.I.Acid Blue 9	2650-18-2	Not data available.
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not data available.

12.5 Results of PBT and vPvB assessment

PBT	Not Available
vPvB	Not Available

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	Not Available
Sewage disposal options	Not Available

Continued...

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Available

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Available
IATA	Not Available

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Available
Class	Not Available
Label	Not Available

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Available

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available
Stowage Category	Not Available

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed
REACH Regulation Annex XVII Restriction	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Blue 9	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid Red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

Continued...

3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/09/05
Revision Date	2022/09/05
Reason for revision	——

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas: Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF:BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB:very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

Safety Data Sheet

Highlighter ink-dye（Violet）

Version: V1.0.0.1
Creation Date: 2020/03/24
Revision Date: 2020/03/24

***Prepared according to EU regulation No. 2015/830**

1 Identification of the substance/mixture and of the company/undertaking

Product identifier

Product Name	Highlighter ink-dye（Violet）
Cat No.	
CAS NO.	-
EC NO.	-
Molecular Formula	-

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

Details of the supplier of the Safety Data Sheet

Name of the company	Shanghai NNW New Materials Technology Co., Ltd.
Address of the company	ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai 200335, CHINA
Post code	200335
Telephone number	021-64476059
Fax number	021-64476096
E-mail address	tech@nnwchina.com

Emergency phone number

Emergency phone number	13311812200

2 Hazards identification

CLP classification according to Regulation（EC）No. 1272/2008

According to Regulation (EC) No 1272/2008 and its amendments. Not classified as a dangerous substance.

Label elements

Hazard pictograms	Not applicable
Signal word	**Not applicable**

Hazard statements

Hazard statements	Not applicable

Precautionary statements

◆ Prevention

Prevention	Not applicable

◆ Response

Response	Not applicable

◆ Storage

Storage	Not applicable

◆ Disposal

Disposal	Not applicable

Other hazards

	Not applicable

3 Composition/information on ingredients

Component	Cas No.	EC No.	Index No.	Hazard classification according to CLP	Concentration (weight percent, %)
Glycerol	56-81-5	200-289-5	-	Not Classified	15
Water	7732-18-5	231-791-2	-	Not Classified	80.5~83.5
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	2650-18-2	220-168-0	-	Not Classified	1~3
Hydrogen 3,6-bis(diethylamino)-9-(2,4-disulphonatophenyl)xanthylium, sodium salt	3520-42-1	222-529-8	-	Not Classified	0.5~1.5

4 First aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Firefighting measures

Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable for surrounding area.
Unsuitable extinguishing media	There is no restriction on the type of extinguisher which may be used.

Specific hazards arising from the substance or mixture

1	Development of hazardous combustion gases or vapor possible in the event of fire.
2	May expansion or decompose explosively when heated or involved in fire.

Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus（MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7 Handling and storage

Precautions for handling

◆ Protective measures

1	Handling is performed in a well ventilated place.
2	Wear suitable protective equipment.
3	Avoid contact with skin and eyes.

◆ Measures to prevent fire

1	Keep away from heat/sparks/open flames/ hot surfaces.

◆ Measures to prevent aerosol and dust generation

1	Not applicable.

◆ Advice on general occupational hygiene

1	Wash hands and face after using of the substances.
2	Replace the contaminated clothing immediately.

Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

Specific end uses

1	In addition to use mentioned in the first parts, unforeseen other specific end uses.

8 Exposure controls/personal protection

Control parameters

◆ Occupational Exposure limit values

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m^3	ppm	mg/m^3

Glycerol. mist 56-81-5	~~USA - OSHA~~ South Korea	- -	15 10	- -	- -
	Ireland	-	10	-	-
	Germany (DFG)	-	50	-	100
	Belgium	-	10	-	-
	Australia	-	10	-	-

◆ Biological limit values

Biological limit values	No information available

◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air（Series standard）.

◆ Derived No effect level(DNEL)

Component	Route of exposure	DNEL for Workers			
		Acute effects(local)	Acute effects(systemic)	Chronic effects(local)	Chronic effects(systemic)
Glycerol 56-81-5	Inhalation	No data available	No data available	56 mg/m3	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Water 7732-18-5	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium 2650-18-2	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available
Hydrogen 3,6-bis(diethylamino)-9-(2,4-disulphonatophenyl)xanthylium, sodium salt 3520-42-1	Inhalation	No data available	No data available	No data available	No data available
	Oral	No data available	No data available	No data available	No data available
	Dermal	No data available	No data available	No data available	No data available

◆ Predicted No Effect Concentration（PNEC）

Predicted No Effect Concentration（PNEC）	No information available

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand protection	Wear protective gloves（such as butyl rubber）, passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and body protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

9 Physical and chemical properties

Appearance	Violet
Odor	No information available
Odor threshold	No information available
pH	7.00（20℃,Water）
Melting point/freezing point(℃)	0（Water）
Initial boiling point and boiling range(℃)	100（Water）
Flash point(Closed cup,℃)	No information available
Evaporation rate	No information available
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit：No information available；Lower limit：No information available
Vapor pressure	2.33kPa（Water）
Vapor density(Air＝1)	＞1（Water）
Relative density(Water=1)	1（Water）
Solubility(mg/L)	No information available
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(℃)	No information available
Decomposition temperature(℃)	No information available
Viscosity (mm^2/s)	No information available
Explosive properties	No information available
Oxidizing properties	No information available

10 Stability and reactivity

Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion. In contact with active metals (alkali metals, Na, Ca etc.) causes a reaction and release hydrogen.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum. Alkali, sodium, calcium, and other active metal, halogen, metal oxide, nonmetal oxide, acyl halide and metal phosphide.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

Acute toxicity

Component	Cas No.	LD_{50}(oral)	LD_{50}(dermal)	LC_{50}(inhalation，4h)
Glycerol	56-81-5	12600mg/kg(Rat)	> 10000mg/kg(Rabbit)	No information available
Hydrogen 3,6-bis(diethylamino)-9-(2,4-disulphonatophenyl)xanthylium, sodium salt	3520-42-1	10300mg/kg(Mouse)	No information available	No information available

Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	56-81-5	Glycerol	Not Listed	Not Listed
2	7732-18-5	Water	Not Listed	Not Listed
3	2650-18-2	Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	Not Listed	Not Listed
4	3520-42-1	Hydrogen 3,6-bis(diethylamino)-9-(2,4-disulphonatophenyl)xanthylium, sodium salt	Not Listed	Not Listed

Others

Highlighter ink-dye（Violet）	
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Skin sensitization	No information available
Respiratory sensitization	No information available
Reproductive toxicity	No information available
STOT-single exposure	No information available
STOT-repeated exposure	No information available
Aspiration hazard	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity(additional)	No information available

12 Ecological information

Acute aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
Glycerol	56-81-5	LC_{50}: 68100mg/L (96h)(Fish)	No information available	No information available

Chronic aquatic toxicity

Component	Cas No.	Fish	Crustaceans	Algae
Glycerol	56-81-5	No information available	No information available	No information available

Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
酸性兰 9	2650-18-2	High	High
水	7732-18-5	Low	Low

Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
酸性兰 9	2650-18-2	Low	Log Kow=2.0459
水	7732-18-5	Low	Log Kow=-1.38

Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
酸性兰 9	2650-18-2	Low	10000000000
水	7732-18-5	Low	14.3

Results of PBT and vPvB assessment

Component	Cas No.	Results of PBT and vPvB assessment （according to (EC) No 2015/830)
甘油	56-81-5	not PBT/vPvB
水	7732-18-5	not PBT/vPvB
酸性兰 9	2650-18-2	not PBT/vPvB
酸性红52	3520-42-1	not PBT/vPvB

13 Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	Not applicable

IMDG-CODE

IMDG-CODE	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

ICAO/IATA-DG

ICAO/IATA-DG	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

UN-ADR

UN-ADR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

15 Regulatory information

International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	√	√	√	√	√	√	√	√
Water	√	√	√	√	√	√	√	√
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	√	√	√	√	√	√	√	√
Hydrogen 3,6-bis(diethylamino)-9-(2,4-disulphonatophenyl)xanthylium, sodium salt	√	√	√	√	√	√	√	√

【EINECS】 European Inventory of Existing Commercial Chemical Substances
【TSCA】 United States Toxic Substances Control Act Inventory
【DSL】 Canadian Domestic Substances List
【IECSC】 China Inventory of Existing Chemical Substances
【NZIoC】 New Zealand Inventory of Chemicals
【PICCS】 Philippines Inventory of Chemicals and Chemical Substances
【KECI】 Existing and Evaluated Chemical Substances
【AICS】 Australia Inventory of Chemical Substances

European chemical inventory

Component	A	B	C	D	E	F	G
Glycerol	×	×	×	√	√	×	×
Water	×	×	×	√	×	×	×
Diammonio(ethyl)[4-[[4-[ethyl(3-sulphonatobenzyl)amino]phenyl](2-sulphonatophenyl)methylene]cyclohexa-2,5-dien-1-ylidene](3-sulphonatobenzyl)ammonium	×	×	×	√	×	×	×
Hydrogen 3,6-bis(diethylamino)-9-(2,4-disulphonatophenyl)xanthylium, sodium salt	×	×	×	√	×	×	×

【A】 Candidate list of Substances of Very High Concern for authorization under EU REACh regulation
【B】 Substances requiring authorisation under EU REACh regulation
【C】 Substances restricted under EU REACh
【D】 Pre-registered substances under EU REACh
【E】 Registered substances under EU REACh
【F】 Substance Evaluation – CoRAP under EU REACh

【G】List of priority substances under EU water policy （Directive 2455/2001/EC）

16 Others

Information on revision

Creation Date	2020/03/24
Revision Date	2020/03/24
Reason for revision	-

Reference

【1】IPCS:The International Chemical Safety Cards (ICSC) ,website: http://www.ilo.org/dyn/icsc/showcard.home。

【2】IARC，website: http://www.iarc.fr/

【3】OECD: The Global Portal to Information on Chemical Substances, website: http://www.echemportal.org/echemportal/index?pageID=0 & request_locale=en。

【4】CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple。

【5】NLM:ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp。

【6】EPA: Integrated Risk Information System, website: http://cfpub.epa.gov/iris/。

【7】U.S. Department of Transportation:ERG, website: http://www.phmsa.dot.gov/hazmat/library/erg。

【8】Germany GESTIS-database on hazard substance, website: http://gestis-en.itrust.de/。

Abbreviations and acronyms

CAS-Chemical Abstracts Service	CMR-Carcinogens, mutagens or substances toxic to reproduction
PC-STEL-Short term exposure limit	PC-TWA-Time Weighted Average
DNEL-Derived No Effect Level	IARC-International Agency for Research on Cancer
RPE-Respiratory Protective Equipment	PNEC-Predicted No Effect Concentration
LC50-Lethal Concentration 50%	LD50-Lethal Dose 50%
NOEC-No Observed Effect Concentration	EC50-Effective Concentration 50%
PBT-Persistent, Bioaccumulative, Toxic	POW-Partition coefficient Octanol:Water
BCF-Bioconcentration factor (BCF)	vPvB-very Persistent, very Bioaccumulative
IMDG-International Maritime Dangerous Goods	ICAO/IATA-International Civil Aviation Organization/International Air Transportation Association
UN-The United Nations	ACGIH-American Conference of Governmental Industrial Hygienists
NFPA-National Fire Protection Association	OECD-Organization for Economic Co-operation and Development

Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACh Regulation The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink-dye

Version：1.1

Creation Date：2022/09/05

Revision Date：2022/09/05

Color: yellow

Country of Destination：EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Highlighter ink-dye (yellow)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

Not Applicable

SECTION 3 Composition/information on ingredients

3.1 Mixtures

➢ **Description：** Mixture of substances listed below with nonhazardous additions.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.6358-69-6 2.228-783-6 3.Not Available 4.Not Available	0.2-1.0	**Solvent Green 7**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	84-84.8	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable forsurrounding area.
Unsuitable extinguishing media	There is no restriction on the type ofextinguisher which may be used.

5.2 Special hazards arising from the substrate or mixture

No further relevant information available.

5.3 Advice for firefighters

Continued...

1	Wear fully protective suit and mouth respiratory protective device.
2	Prevent fire extinguishing water from contaminating surface water or the ground water system.
3	Fight fire from a safe distance, with adequate cover.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.
5	For the general occupational hygienic measures refer to section 8.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.
Information about storage in one common storage facility	Store away from foodstuffs.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)

Continued...

Solvent Green 7	Inhalation 16.4 mg/m³ (Local, Chronic) Dermal 0.03 mg/kg bw/day (Systemic, Chronic) Inhalation 2.9 mg/m³ (Local, Chronic)* Dermal 0.0357 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 2.06 mg/kg sediment dw (Sediment (Fresh Water)) 0.206 mg/kg sediment dw (Sediment (Marine)) 0.353 mg/kg soil dw (Soil)

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- **Ingredient data**

Ingredient	Source	TWA	STEL	Peak
Glycerol, mist	AGS (Germany)	200 mg/m³ [1]	400mg/m³ [1][2]	Not Available
	DFG(Germany)	200 mg/m³ [1]	400mg/m³ [1][2]	Not Available
	MAK(Germany)	200I mg/m³	Not Available	I(2)
	VLEP (France)	10 mg/m³	Not Available	Not Available
	WELs(UK)	10 mg/m³	Not Available	Not Available

Remarks: 1..Inhalable fraction 2. 15 minutes average value

- **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	No special requirements.
Skin and body protection	No special requirements.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Yellow	**Viscosity**	**Dynamic**	Not Available
Physical state	Liquid		**Kinematic:**	Not Available
Odour	Odourless	**Vapour density (Air = 1)**		Not Available
Odour threshold	Not Available	**Density/Relative density**		Not Available
pH (as supplied)	Not Available	**Decomposition temperature**		Not Available
Melting point/freezing point(°C)	Not Available	**Particle Size**		Not Available
Flash point(Closed cup,°C)	Not Available	**Vapour pressure (kPa)**		Not Available
Flammability	Not Available	**Relative vapor density**		Not Available
Evaporation rate	Not Available	**Partition coefficient n-octanol/ water**		Not Available
Upper Explosive Limit (%)	Not Available	**Auto-ignition temperature(°C)**		Not Available
Lower Explosive Limit (%)	Not Available	**Explosive properties**		Product does not present anexplosion hazard
Self-igniting	Not Available	**Oxidising properties**		Not Available

Continued...

Taste	Not Available	**Surface Tension (dyn/cm ormN/m)**	Not Available
Volatile Component (%vol)	Not Available	**Gas group**	Not Available
pH as a solution (1%)	Not Available	**VOC g/L**	Not Available

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink-dye	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Solvent Green 7	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:15000 mg/kg Dermal (guinea pig) LD50: 2000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
Solvent Green 7	6358-69-6	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

11.2.1 Endocrine Disruption Properties

Not Available

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink-dye	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	885mg/l	1
	EC50	24h	Crustacea	10000mg/l	2
	EC50	72h	Algae or other aquatic plants	2.9mg/l	4
Solvent Green 7	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	NOEC	48h	Crustacea	100 mg/l	2
	LC50	96h	Fish	100 mg/l	2
	EC50	48h	Crustacea	100-500 mg/l	2
	EC50	168h	Aquatic plants other than algae	100 mg/l	2
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data				

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
Glycerol	56-81-5	High	Low
Solvent Green 7	6358-69-6	Middling	Low

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	Low	Log Kow=-1.76
Solvent Green 7	6358-69-6	Low	Log Kow<=3

12.4 Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Glycerol	56-81-5	High	Koc=23.74
Solvent Green 7	6358-69-6	Middling	Koc=3.313 ± 0.007

12.5 Results of PBT and vPvB assessment

PBT	Not Available
vPvB	Not Available

12.6 Endocrine Disruption Properties

Not Available

Continued...

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Available

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Available
IATA	Not Available

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Available
Class	Not Available
Label	Not Available

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Available

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available
Stowage Category	Not Available

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed

Continued...

Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation(06/10/2022)	None of the ingredients is listed
REACH Regulation Annex XVII Restriction(11/09/2021)	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List(04/11/2022)	None of the ingredients is listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Solvent Green 7	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/09/05
Revision Date	2022/09/05
Reason for revision	——

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas: Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

Continued...

vPvB:*very Persistent and very Bioaccumulative*

16.3 Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference.Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink

Version：1.1

Creation Date：2022/10/13

Revision Date：2022/10/13

Color: red

Country of Destination：EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Highlighter ink (red)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Mixtures

- **Description**：Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	1.0-2.0	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.35773-43-4 2.252-722-2 3.Not Available 4.Not Available	0.5-2.5	**3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	80.5-83.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable forsurrounding area.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritant vapor in air under fire.

5.3 Advice for firefighters

1	Wear fully protective suit and mouth respiratory protective device.
2	Prevent fire extinguishing water from contaminating surface water or the ground water system.

Continued...

3	Fight fire from a safe distance, with adequate cover.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.Keep containers tightly closed .
Information about storage in one common storage facility	Store away from food stuff containers.Separated from strong oxidants and strong acids.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)

Continued...

Acid Red 18	*Inhalation 24.7 mg/m³ (Systemic, Chronic)* *Dermal 7 mg/kg bw/day (Systemic, Chronic)* *Inhalation 3.7 mg/m³ (Systemic, Chronic)** *Dermal 2.5 mg/kg bw/day (Systemic, Chronic)** *Oral 2.5 mg/kg bw/day (Systemic, Chronic)**	*0.1 mg/L (Water (Fresh))* *1 mg/L (Water - Intermittent release)* *0.01 mg/L (Water (Marine))* *10 mg/L (STP)* *0.392 mg/kg sediment dw (Sediment (Fresh Water))* *0.0392 mg/kg sediment dw (Sediment (Marine))* *0.0197 mg/kg soil dw (Soil)*

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

➢ ***Ingredient data***

Ingredient	*Source*	*TWA*	*STEL*	*Peak*
Glycerol, mist	*AGS (Germany)*	*200 mg/m³[1]*	*400mg/m³[1][2]*	*Not data available*
	DFG(Germany)	*200 mg/m³[1]*	*400mg/m³[1][2]*	*Not data available*
	MAK(Germany)	*200I mg/m³*	*Not data available*	*I(2)*
	VLEP (France)	*10 mg/m³*	*Not data available*	*Not data available*
	WELs(UK)	*10 mg/m³*	*Not data available*	*Not data available*

Remarks: *1..Inhalable fraction 2. 15 minutes average value*

➢ ***Emergency Limits***

Ingredient	*TEEL-1*	*TEEL-2*	*TEEL-3*
Glycerol	*45mg/m³*	*180mg/m³*	*1100mg/m³*

8.2 Engineering controls

General protective and hygienic measures	*The usual precautionary measures are to be adhered to when handling chemicals.*

8.3 Personal protection equipment

General requirement	
Eye protection	*Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).*
Hand protection	*Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.*
Respiratory protection	*No special requirements.*
Skin and body protection	*No special requirements.*
Other protection	*No special equipment needed when handling small quantities.*

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	*Red*	***Viscosity***	***Dynamic***	*Not Available*
Physical state	*Liquid*		***Kinematic:***	*Not Available*
Odour	*Odourless*	***Vapour density (Air = 1)***		*Not determined*
Odour threshold	*Not determined*	***Density/Relative density***		*Not determined*
pH (as supplied)	*Not determined*	***Decomposition temperature***		*Not determined*
Melting point/freezing point(°C)	*Not determined*	***Particle Size***		*Not determined*
Flash point(Closed cup,°C)	*Not determined*	***Vapour pressure (kPa)***		*Not determined*
Flammability	*Not flammable liquid*	***Relative vapor density***		*Not determined*
Evaporation rate	*Not determined*	***Partition coefficient n-octanol/ water***		*Not determined*
Upper Explosive Limit (%)	*Not determined*	***Auto-ignition temperature(°C)***		*Not determined*
Lower Explosive Limit (%)	*Not determined*	***Explosive properties***		*Product does not present anexplosion hazard*
Self-igniting	*Not determined*	***Oxidising properties***		*Not determined*

Continued...

Taste	Not determined	**Surface Tension (dyn/cm ormN/m)**	Not determined
Volatile Component (%vol)	Not determined	**Gas group**	Not determined
pH as a solution (1%)	Not determined	**VOC g/L**	Not determined

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink	**TOXICITY**	**IRRITATION**
	Not data available	Not data available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
3-(5-chlorobenzoxazol-2-yl)-4-7-(diethylamino)-2-5-Benzopyrone	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>5000 mg/kg	No data available

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
Acid Red 18	2611-82-7	Not Listed	Not Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

Continued...

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	Not data available	Not data available	Not data available	Not data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/l
	EC50	24h	Aquatic invertebrates	10000 mg/l
	NOEC	168h	Aquatic invertebrates	800 mg/l
	EC50	192h	Aquatic algae and cyanobacteria	2900 mg/l
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	1000 mg/l
	EC50	48h	Aquatic invertebrates	100 mg/l
	NOEC	168h	Aquatic plants other than algae	100 mg/l
	BCF	672h	Fish	<=0.55 l/kg(conc.474mg/l)
	BCF	672h	Fish	<=5.6 l/kg(conc.47.4mg/l)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Acid Red 18	2611-82-7	Not readily biodegradable

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	Potential for a low bioaccumulation	Log Kow=-1.75
Acid Red 18	2611-82-7	Potential for a low bioaccumulation	Log Kow=-2.267
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not data available.	Log Kow=4.9

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-Water Partitioning Coefficient (Koc)

Continued...

Glycerol	56-81-5	Koc=1
Acid Red 18	2611-82-7	Koc=3.16
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	35773-43-4	Not data available.

12.5 Results of PBT and vPvB assessment

PBT	Not Available
vPvB	Not Available

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Available

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Available
IATA	Not Available

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Available
Class	Not Available
Label	Not Available

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Available

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available

Continued...

Stowage Category	Not Available

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed
REACH Regulation Annex XVII Restriction	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid Red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
3-(5-chlorobenzoxazol-2-yl)-7-(diethylamino)-2-benzopyrone	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/10/13
Revision Date	2022/10/13
Reason for revision	——

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas: Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

Continued...

STEL:*Short Term Exposure Limit*

TEEL:*Temporary Emergency Exposure Limit*

ADR:*Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

IMDG:*International Maritime Code for Dangerous Goods*

IATA:*International Air Transport Association*

GHS:*Globally Harmonised System of Classification and Labelling of Chemicals*

EINECS:*European Inventory of Existing Commercial Chemical Substances*

NOEC:*No Observed Effect Concentration*

BCF*:BioConcentration Factors*

ELINCS:*European List of Notified Chemical Substances*

DNEL:*Derived No-Effect Level (REACH)*

PNEC:*Predicted No-Effect Concentration (REACH)*

LC50:*Lethal concentration, 50 percent*

LD50:*Lethal dose, 50 percent*

PBT:*Persistent, Bioaccumulative and Toxic*

vPvB:*very Persistent and very Bioaccumulative*

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1803-blue Blue

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N °1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N °1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N °1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	50-80%
215-536-8	1330-38-7	CI 74180	Not classified	Not classified	0.1-0.4%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** blue **Odour: watery** slightly
Ignition temperature: ＞287^{0}C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user's attention is drawn to the possible existence of specific European, national or local regulations

regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1802-green Green

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N °1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N °1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N °1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	60-80%
228-783-6	6358-69-6	CI 59040	Not classified	Not classified	0.1-0.3%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** green **Odour: watery** slightly
Ignition temperature: ＞287^{0}C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user’s attention is drawn to the possible existence of specific European, national or local regulations

regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1812-gry GREY

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N° 1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N°1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N°1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	50-85%
/	8005-03-6	CI 50420	Not classified	Not classified	0.1-0.2%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** yellow **Odour: watery** slightly
Ignition temperature: ＞287^0C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1811-light yellow Light Yellow

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N° 1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N°1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N°1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	50-85%
228-783-6	6358-69-6	CI 59040	Not classified	Not classified	0.1-0.2%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** yellow **Odour: watery** slightly
Ignition temperature: ＞287^0C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,

On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1906-orange Orange

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N °1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N °1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N °1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	60-80%
221-326-1	3068-39-1	C.I. 45161	Not classified	Not classified	0.1-0.5%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** orange **Odour: watery** slightly
Ignition temperature: ＞287^{0}C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user’s attention is drawn to the possible existence of specific European, national or local regulations

regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1905-pink Pink

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N °1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N °1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N °1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	15-20%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	50-80%
221-326-1	3068-39-1	C.I. 45161	Not classified	Not classified	0.2-1%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** pink **Odour: watery** slightly
Ignition temperature: ＞287^0C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user’s attention is drawn to the possible existence of specific European, national or local regulations

regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1804-violet Violet

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N °1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N °1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N °1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	50-80%
215-536-8	1330-38-7	CI 74180	Not classified	Not classified	0.1-0.2%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** violet **Odour: watery** slightly
Ignition temperature: ＞287^0C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user's attention is drawn to the possible existence of specific European, national or local regulations

regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Safety Data Sheet

(According to 2006/1907/EC)

1. Identification of the Substance/Preparation/Company

Product details

Trade name: highlighter Ink /CL 1801-yellow Yellow

Substance/Mixture: Mixture/preparation

Form: Fluid

Relevant identified uses advised against

Identified uses: Laboratory chemicals, Manufacture of the substance/mixture

Product type:

Manufacturer /Supplier:

Ningbo Beilun LongHai Stationery Co. Ltd.

No.58 Pujiang Road. Ningbo,China

Phone :86-574—86220591

Fax: 86-574—86220591

Further information obtainable from:

Technical service ,

TEL.:86-574—86220591

Mobile : 86-13486075294

Information in case of emergency:

TEL.:86-13486075294

2. Hazards identification

Classification of the mixture:

Classification: The mixture is not classified according European Regulation CLP N °1272/2008 /EC with its adaptation.

Label elements:

No marking according Regulation CLP N °1272/2008/EC.

Others Hazard:

There is not having other hazard classification information about the mixture for present knowledge.

3. Composition /information on ingredients

Chemical characterization

Mixture of the following substances: containing non-hazardous substances and coloring pigments.

Description: The following material classification according to 1999/45/EC and CLP N °1272/2008/EC

Components:					
EINECS/ELINCS	CAS	Common Name	1999/45/EC	CLP	Cone
200-289-5	56-81-5	glycerol	Not classified	Not classified	10-15%
203-473-3	107-21-1	Ethylene glycol	Not classified	Not classified	1-2%
231-791-2	7732-18-5	water	Not classified	Not classified	50-80%
228-783-6	6358-69-6	CI 59040	Not classified	Not classified	0.1-0.5%

Additional information: For the wording of the listed risk phrases refer to section 16.

4. First –aid measures

Inhalation: Move the affected person away from the contaminated area and into the fresh air

Skin contact: Immediately wash and rinse with plenty of water

Eye contact: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 min. minimum) always refers to an eye specialist, even if there are no mediate symptoms.

Ingestion: Never attempt to induce vomiting. Call a doctor immediately

5. Fire –fighting measures

Suitable extinguishing media: Carbon dioxide (CO2). Foam. Powders

Not suitable extinguishing media: If there is a fire close by using suitable extinguishing agent

Specific hazards: During combustion, toxic vapors may be released if product is heated to dryness.

Specific fire fighting methods: Do not attempt to fight the fire without suitable protective equipment may intervene

Protection of fire-fighters: Self-contained breathing apparatus Complete protective clothing

6. Accidental release measure

Personal precautions: Avoid contact with skin and eyes .Do not breathe vapour; Do not smoking.

Environmental precautions: Do not discharge into drains and rivers

Methods for cleaning up:

Neutralization: Absorb spillage with: inert absorbent material earth or sand

Cleaning/decontamination: Wash non-recoverable remainder with large amounts of water

Disposal: Dispose of contaminated materials in accordance with current regulations

7. Handling and storage

Handing:

Technical measures: Vapors extraction at source. Material and equipment suitable for use with strongly colored water based liquids.

Precautions: Avoid any direct contact with the product. Work in a well-ventilated area .Smoking is forbidden .Avoid the build-up of electrostatic charge

Storage:

Technical measures: The floor of the depot must be impermeable, noncombustible and designed to form a basin, in order that stored liquids should not, under any circumstances, be released outside

Storage conditions:

Recommended: Store: in a cool, well-ventilated area, the container tightly closed away from any source of ignition

Incompatible materials: Strong oxidizing agents

Packaging materials:

Not suitable: Can cause some metals to rust.

8. Exposure controls / personal protection

Engineering measures: Ensure good ventilation of the work station .Extraction to remove vapors at their source

Personal protective equipment:

Respiratory protection: In the event of insufficient ventilation:, Suitable breathing apparatus

Hand protection: Impermeable protective gloves

Eye protection: Safety spectacles

Skin and body protection: Suitable clothing

Collective emergency equipment: Eye fountain .Safety shower

Hygiene measures: Do not drink, eat or smoke in the workplace

9. Physical and chemical properties

General Information
Form : Fluid **Color :** yellow **Odour: watery** slightly
Ignition temperature: ＞287^{0}C
Self-igniting: Not determined
Danger of explosion: product does not present an explosion hazard
Vapour density (air=1): greater than 1
Solubility **in water :** Miscible (in all proportions) **in organic solvents:** Miscible (in all proportions) with: glycerol

10. Stability and reactivity

Stability: Stable at ambient temperature and under normal conditions of use

Hazardous reactions:

Conditions to avoid: May ignite on heating to dryness when all water is evaporated

Materials to avoid: Strong oxidizing agents

Hazardous decomposition

Products: On combustion or on thermal decomposition

11. Toxicological information

Acute toxicity: Vapors may cause drowsiness and dizziness

Acute symptoms: On ingestion: Nausea. vomiting. Central Nervous, System depressant,
On inhalation: Dizziness, Headaches

Local effects: At high concentrations, the vapours can be irritating to the eyes, nose and throat .Repeated or Prolonged contract may cause slight, irritation to the skin,

Eye contact: May cause severe ocular lesions

Further information: The ink will be contained in the fibrous reservoir of a small capacity marker containing 3 grams or less which will limit considerably the exposure possibilities for the user.

12. Ecological information

Ecotoxicity: Effects on the aquatic environment: Glycol

May causes adverse effects to the aquatic environment.

13. Disposal considerations

Destruction/Disposal: Dispose of in accordance with relevant local regulations.

Destruction/disposal: Destroy at an authorized site.

Note: The user’s attention is drawn to the possible existence of specific European, national or local regulations

regarding disposal

14. Transport information

International regulations: Not regulated

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Do not have any information

Chemical safety assessment

"No safety chemical assessment has been carried out for the mixture".

16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This safety data sheet was prepared in accordance with Regulation (EC) 1272/2008 (Regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Baby blue

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Baby blue)*
Synonyms	*—*
CAS NO.	*—*
EC NO.	*—*
Chemical Formula	*—*

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	*—*

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Continued...

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2650-18-2 2.220-168-0 3.Not Available 4.Not Available	1.5	**C.I.Acid Blue 9**	Not Classified	Not Applicable	Not Applicable
1.1934-21-0 2.217-699-5 3.Not Available 4.Not Available	0.5	**Acid Yellow 23**	Not Classified	Not Applicable	Not Applicable
1.9003-39-8 2.Not Available 3.Not Available 4.Not Available	1.0	**Polyvinyl pyrrolidone**	Not Classified	Not Applicable	Not Applicable
1.3520-42-1 2.222-529-8 3.Not Available 4.Not Available	0.5	**C.I.Acid Red 52**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	0.5	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	86.0	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.

Continued...

Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

Continued...

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)
C.I.Acid Blue 9	Inhalation 88.3mg/m³(Systemic, Chronic) Dermal 17.67 mg/kg bw/day (Systemic, Chronic) Dermal 6.31 mg/kg bw/day (Systemic, Chronic)* Inhalation 19 mg/m³(Systemic, Chronic)* Oral 6.31mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 0.1 mg/L (Marine Water - Intermittent release) 0.363 mg/kg sediment dw (Sediment (Fresh Water)) 0.0363 mg/kg sediment dw (Sediment (Marine)) 1mg/kg soil dw (Soil) 10 mg/L (STP)
Acid yellow 23	Inhalation 372.52 mg/m³ (Systemic, Chronic) Dermal 52.82 mg/kg bw/day (Systemic, Chronic) Inhalation 91.86 mg/m³ (Systemic, Chronic)* Dermal 26.41 mg/kg bw/day (Systemic, Chronic)* Oral 26.41 mg/kg bw/day (Systemic, Chronic)*	0.12 mg/L (Water (Fresh)) 1.2 mg/L (Water - Intermittent release) 0.012 mg/L (Water (Marine)) 10 mg/L (STP) 469.92 µg/kg sediment dw (Sediment (Fresh Water)) 46.992 µg/kg sediment dw (Sediment (Marine)) 23.53 µg/kg soil dw (Soil)

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- **Ingredient data**

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	Belgium	10mg/m³	Not data available
	VLEP (France)	10mg/m³	Not data available
	WELs(UK)	10mg/m³	Not data available
	Finland	20mg/m³	Not data available
	AGS(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	DFG(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	Ireland	10mg/m³	Not data available
	Poland	10mg/m³	Not data available
	Spain	10mg/m³	Not data available
	Switzerland	50mg/m³inhalable aerosol	100mg/m³inhalable aerosol

Remarks: *1. Inhalable fraction 2.15 minutes average value*

- **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
C.I.Acid Blue 9	30mg/m³	330mg/m³	2000mg/m³
Polyvinyl pyrrolidone	51mg/m³	560mg/m³	20000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

Continued...

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	Not required under normal conditions of use.
Skin and body protection	Not required under normal conditions of use.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Baby blue	**Viscosity**	**Dynamic**	Not determined
Physical state	Liquid		**Kinematic:**	Not determined
Odour	Odourless	**Vapour density (Air = 1)**		Not determined
Odour threshold	Not determined	**Density/Relative density**		Not determined
pH (as supplied)	Not determined	**Decomposition temperature**		Not determined
Melting point/freezing point(°C)	Not determined	**Particle Size**		Not determined
Flash point(Closed cup,°C)	Not determined	**Vapour pressure (kPa)**		Not determined
Flammability	Not flammable liquid	**Relative vapor density**		Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**		Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**		Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**		Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**		Not determined
Taste	Not determined	**Surface Tension (dyn/cm or mN/m)**		Not determined
Volatile Component (%vol)	Not determined	**Gas group**		Not determined
pH as a solution (1%)	Not determined	**VOC g/L**		Not determined

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No further relevant information available.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	No dangerous decomposition products known.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.

Continued...

Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Water based dye ink	**TOXICITY**	**IRRITATION**
	No data available	No data available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>11500 mg/kg[1] Inhalation(rat) LC50: >5.85mg/L 4h[1] Dermal (guinea pig) LD50:45 ml/kg[1]	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
C.I.Acid Red 52	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Polyvinyl pyrrolidone	**TOXICITY**	**IRRITATION**
	Oral(mouse) LD50:100000mg/kg[2]	No data available
C.I.Acid Blue 9	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >1900 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Acid yellow 23	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>1000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.Value obtained from manufacturer's SDS.	

11.2 Carcinogenicity

Component	Cas No.	IARC
Acid Red 18	2611-82-7	Not listed
Glycerol	56-81-5	Not listed
Water	7732-18-5	Not listed
C.I.Acid red 52	3520-42-1	Not listed
Polyvinyl pyrrolidone	9003-39-8	Category 3
Acid yellow 23	1934-21-0	Not listed
C.I.Acid blue 9	2650-18-2	Not listed

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.

Continued...

STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	No data available	No data available	No data available	No data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/L
	EC50	48h	Aquatic invertebrates	1955mg/L
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/L
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	NOEC	168h	Aquatic plants other than algae	100 mg/L
	EC50	48h	Aquatic invertebrates	>100 mg/L
	EC0	48h	Aquatic invertebrates	100 mg/L
	LC50	96h	Fish	>1000 mg/L
	BCF	672h	Fish	<=0.55 l/kg(conc.0.474mg/L)
	BCF	672h	Fish	<=5.6 l/kg(conc.0.0474mg/L)
C.I.Acid red 52	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	EC50	48h	Aquatic invertebrates	120 mg/L
	EC50	168h	Aquatic plants other than algae	1000 mg/L
	EC10	168h	Aquatic plants other than algae	161.6-1000 mg/L
	BCF	672h	Fish	<=0.57 l/kg(conc.1690μg/L)
	BCF	672h	Fish	<=5.3 l/kg(conc.169μg/L)
C.I.Acid Blue 9	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	>100 mg/L
	EC50	48h	Aquatic invertebrates	>100 mg/L
	NOEC	504h	Aquatic invertebrates	10000 mg/L
	EC50	168h	Aquatic plants other than algae	200 mg/L
	EC10	168h	Aquatic plants other than algae	12.5 mg/L
Acid yellow 23	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	>125 mg/L
	EC50	48h	Aquatic invertebrates	>125 mg/L
	EC50	72h	Aquatic algae and cyanobacteria	>125 mg/L
	BCF	1008h	Fish	<=0.29 l/kg(conc.600pbb)
	BCF	1008h	Fish	<=3 l/kg(conc.60pbb)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Acid red 18	2611-82-7	Not readily biodegradable in water
C.I.Acid red 52	3520-42-1	Not readily biodegradable in water

Continued...

C.I.Acid Blue 9	2650-18-2	Not ready biodegradable in water
Acid yellow 23	1934-21-0	Not readily biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244 - 0.046
Acid red 18	2611-82-7	No potential for bioaccumulation	LogKow=-2.267
C.I.Acid red 52	3520-42-1	No data available	LogKow=-2.2
C.I.Acid Blue 9	2650-18-2	Potential for a low bioaccumulation	LogKow=-3
Acid yellow 23	1934-21-0	No potential for bioaccumulation	LogKow=-1.572

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
Acid red 18	2611-82-7	Koc=3.16
C.I.Acid red 52	3520-42-1	No data available
C.I.Acid Blue 9	2650-18-2	No data available
Acid yellow 23	1934-21-0	Koc=0

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable
vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1.Do not allow wash water from cleaning or process equipment to enter drains. 2.It may be necessary to collect all wash water for treatment before disposal. 3.Recycle wherever possible. 4.Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Applicable
IATA	Not Applicable

14.3 Transport hazard class(es)

Continued...

ADR/RID/ADN, IMDG, IATA	Not Applicable
Class	Not Applicable
Label	Not Applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

UN "Model Regulation"	Not Applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed.
REACH Regulation Annex XVII Restriction	None of the ingredients is listed.
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Red 52	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Polyvinyl pyrrolidone	Not Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Blue 9	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid yellow 23	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

Continued...

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink-dye

Version：1.1

Creation Date：2022/09/05

Revision Date：2022/09/05

Color: blue

Country of Destination：EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Highlighter ink-dye (blue)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

Not Applicable

SECTION 3 Composition/information on ingredients

3.1 Mixtures

➢ **Description：** Mixture of substances listed below with nonhazardous additions.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor /ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2650-18-2 2.220-168-0 3.Not Available 4.Not Available	1.0-3.0	**C.I.Acid Blue 9**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	82.0-84.0	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present..
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable forsurrounding area.
Unsuitable extinguishing media	There is no restriction on the type ofextinguisher which may be used.

5.2 Special hazards arising from the substrate or mixture

No further relevant information available.

5.3 Advice for firefighters

Continued...

1	Wear fully protective suit and mouth respiratory protective device.
2	Prevent fire extinguishing water from contaminating surface water or the ground water system.
3	Fight fire from a safe distance, with adequate cover.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.
5	For the general occupational hygienic measures refer to section 8.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.
Information about storage in one common storage facility	Store away from foodstuffs.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)

Continued...

C.I.Acid Blue 9	*Inhalation 88.3mg/m³(Systemic, Chronic)* *Dermal 17.67 mg/kg bw/day (Systemic, Chronic)* *Dermal 6.31 mg/kg bw/day (Systemic, Chronic)** *Inhalation 19 mg/m³(Systemic, Chronic)** *Oral 6.31mg/kg bw/day (Systemic, Chronic)**	*0.1 mg/L (Water (Fresh))* *1 mg/L (Water - Intermittent release)* *0.01 mg/L (Water (Marine))* *0.1 mg/L (Marine Water - Intermittent release)* *0.363 mg/kg sediment dw (Sediment (Fresh Water))* *0.0363 mg/kg sediment dw (Sediment (Marine))* *1mg/kg soil dw (Soil)* *10 mg/L (STP)*

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- ***Ingredient data***

Ingredient	Source	TWA	STEL	Peak
Glycerol, mist	AGS (Germany)	200 mg/m³ [1]	400mg/m³ [1][2]	Not Available
	DFG(Germany)	200 mg/m³ [1]	400mg/m³ [1][2]	Not Available
	MAK(Germany)	200I mg/m³	Not Available	I(2)
	VLEP (France)	10 mg/m³	Not Available	Not Available
	WELs(UK)	10 mg/m³	Not Available	Not Available

Remarks: *1..Inhalable fraction 2. 15 minutes average value*

- ***Emergency Limits***

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
C.I.Acid Blue 9	30mg/m³	330mg/m³	2000mg/m³

8.2 Engineering controls

General protective and hygienic measures	*The usual precautionary measures are to be adhered to when handling chemicals.*

8.3 Personal protection equipment

General requirement	
Eye protection	*Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).*
Hand protection	*Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.*
Respiratory protection	*No special requirements.*
Skin and body protection	*No special requirements.*
Other protection	*No special equipment needed when handling small quantities.*

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Blue	**Viscosity**	**Dynamic**	Not Available
Physical state	Liquid		**Kinematic:**	Not Available
Odour	Odourless	**Vapour density (Air = 1)**		Not Available
Odour threshold	Not Available	**Density/Relative density**		Not Available
pH (as supplied)	Not Available	**Decomposition temperature**		Not Available
Melting point/freezing point(°C)	Not Available	**Particle Size**		Not Available
Flash point(Closed cup,°C)	Not Available	**Vapour pressure (kPa)**		Not Available
Flammability	Not Available	**Relative vapor density**		Not Available
Evaporation rate	Not Available	**Partition coefficient n-octanol/ water**		Not Available
Upper Explosive Limit (%)	Not Available	**Auto-ignition temperature(°C)**		Not Available

Continued...

Lower Explosive Limit (%)	Not Available	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not Available	**Oxidising properties**	Not Available
Taste	Not Available	**Surface Tension (dyn/cm ormN/m)**	Not Available
Volatile Component (%vol)	Not Available	**Gas group**	Not Available
pH as a solution (1%)	Not Available	**VOC g/L**	Not Available

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink-dye	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
C.I.Acid Blue 9	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >1900 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
C.I.Acid Blue 9	2650-18-2	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

Continued...

11.2.1 Endocrine Disruption Properties

Not Available

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink-dye	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	885mg/l	1
	EC50	24h	Crustacea	10000mg/l	2
	EC50	72h	Algae or other aquatic plants	2.9mg/l	4
C.I.Acid Blue 9	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	NOEC	504h	Crustacea	>10mg/l	2
	LC50	96h	Fish	>100mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	EC50	504h	Aquatic plants other than algae	>200mg/l	2
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data				

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
Glycerol	56-81-5	High	Low
C.I.Acid Blue 9	2650-18-2	Low	Low

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	Low	Log Kow=-1.76

12.4 Mobility in soil

Component	Cas No.	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Glycerol	56-81-5	High	Koc=23.74

12.5 Results of PBT and vPvB assessment

PBT	Not Available
vPvB	Not Available

12.6 Endocrine Disruption Properties

Continued...

Not Available

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Available

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Available
IATA	Not Available

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Available
Class	Not Available
Label	Not Available

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Available

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available
Stowage Category	Not Available

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU

Continued...

Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation(06/10/2022)	None of the ingredients is listed
REACH Regulation Annex XVII Restriction(11/09/2021)	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List(04/11/2022)	None of the ingredients is listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Blue 9	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/09/05
Revision Date	2022/09/05
Reason for revision	——

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas: Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF:BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Continued...

PBT:*Persistent, Bioaccumulative and Toxic*

vPvB:*very Persistent and very Bioaccumulative*

16.3 Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference.Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Bright orange

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Bright orange)*
Synonyms	*—*
CAS NO.	*—*
EC NO.	*—*
Chemical Formula	*—*

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	*—*

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Continued...

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2783-94-0 2. 220-491-7 3.Not Available 4.Not Available	4.0	**Food Yellow 3**	Not Classified	Not Applicable	Not Applicable
1.9003-39-8 2.Not Available 3.Not Available 4.Not Available	1.0	**Polyvinyl pyrrolidone**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	1.5	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	83.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Continued...

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
Food Yellow 3	Inhalation 1469.298 mg/m³ (Local, Chronic) Dermal 833.333 mg/kg bw/day (Systemic, Chronic) Inhalation 362.319 mg/m³ (Local, Chronic) * Dermal 416.667 mg/kg bw/day (Systemic, Chronic)* Oral 208.333 mg/kg bw/day (Systemic, Chronic)*	113.2-165 µg/L (Water (Fresh)) 1.132-1.65 mg/L (Water - Intermittent release) 11.32-16.5 mg/L (Water (Marine)) 1.76 mg/L (STP) 72 054.279 mg/kg sediment dw (Sediment (Fresh Water)) 72 054.279 mg/kg sediment dw (Sediment (Marine)) 34.5 g/kg soil dw (Soil)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)

* Values for General Population

8.1.1 Occupational Exposure Limits (OEL)

➢ **Ingredient data**

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	Belgium	10mg/m³	Not data available
	VLEP (France)	10mg/m³	Not data available
	WELs(UK)	10mg/m³	Not data available
	Finland	20mg/m³	Not data available
	AGS(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	DFG(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	Ireland	10mg/m³	Not data available
	Poland	10mg/m³	Not data available
	Spain	10mg/m³	Not data available
	Switzerland	50mg/m³inhalable aerosol	100mg/m³inhalable aerosol

Remarks: 1. Inhalable fraction 2.15 minutes average value

➢ **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
Polyvinyl pyrrolidone	51mg/m³	560mg/m³	20000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	Not required under normal conditions of use.
Skin and body protection	Not required under normal conditions of use.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

Continued...

9.1 Information on basic physical and chemical properties

Appearance	Bright orange	**Viscosity**	**Dynamic**	Not determined
Physical state	Liquid		**Kinematic:**	Not determined
Odour	Odourless	**Vapour density (Air = 1)**		Not determined
Odour threshold	Not determined	**Density/Relative density**		Not determined
pH (as supplied)	Not determined	**Decomposition temperature**		Not determined
Melting point/freezing point(°C)	Not determined	**Particle Size**		Not determined
Flash point(Closed cup,°C)	Not determined	**Vapour pressure (kPa)**		Not determined
Flammability	Not flammable liquid	**Relative vapor density**		Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**		Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**		Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**		Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**		Not determined
Taste	Not determined	**Surface Tension (dyn/cm or mN/m)**		Not determined
Volatile Component (%vol)	Not determined	**Gas group**		Not determined
pH as a solution (1%)	Not determined	**VOC g/L**		Not determined

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No further relevant information available.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	No dangerous decomposition products known.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Water based dye ink	**TOXICITY**	**IRRITATION**
	No data available	No data available
Polyvinyl pyrrolidone	**TOXICITY**	**IRRITATION**
	Oral(mouse) LD50:100000mg/kg[2]	No data available

Continued...

Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg[1] Inhalation(rat) LC50: > 5.85mg/L 4h[1] Dermal (guinea pig) LD50: 45 ml/kg[1]	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Food Yellow 3	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>2000 mg/kg[1] Dermal (rat) LD50:>2000 mg/kg[1]	Eye:no adverse effect observed (not irritating)(Draize) Skin:no adverse effect observed (not irritating)(Draize)
Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.Value obtained from manufacturer's SDS.	

11.2 Carcinogenicity

Component	Cas No.	IARC
Glycerol	57-55-6	Not listed
Food yellow 3	2783-94-0	Not listed
Polyvinylpyrrolidone	9003-39-8	Category 3
Acid red 18	2611-82-7	Not listed
Water	7732-18-5	Not listed

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	No data available	No data available	No data available	No data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/L
	EC50	48h	Aquatic invertebrates	1955mg/L
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/L
Food yellow 3	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	100 - 216.466 mg/L
	EC50	48h	Aquatic invertebrates	100 - 382.262 mg/L
	NOEC	72h	Aquatic algae and cyanobacteria	15.729 mg/L
	EC50	72h	Aquatic algae and cyanobacteria	113.2 mg/L

Continued...

	Endpoint	Test Duration (hr)	Species	Value
Acid Red 18	NOEC	168h	Aquatic plants other than algae	100 mg/L
	EC50	48h	Aquatic invertebrates	>100 mg/L
	EC0	48h	Aquatic invertebrates	100 mg/L
	LC50	96h	Fish	>1000 mg/L
	BCF	672h	Fish	<=0.55 l/kg(conc.0.474mg/L)
	BCF	672h	Fish	<=5.6 l/kg(conc.0.0474mg/L)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Food yellow 3	2783-94-0	Readily biodegradable in water
Acid red 18	2611-82-7	Not readily biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244 - 0.046
Food yellow 3	2783-94-0	Potential for a low bioaccumulation	BCF=3.2
Acid red 18	2611-82-7	No potential for bioaccumulation	LogKow=-2.267

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
Food yellow 3	2783-94-0	Koc=25110
Acid red 18	2611-82-7	Koc=3.16

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable
vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1. Do not allow wash water from cleaning or process equipment to enter drains. 2. It may be necessary to collect all wash water for treatment before disposal. 3. Recycle wherever possible 4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

Continued...

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Applicable
IATA	Not Applicable

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Applicable
Class	Not Applicable
Label	Not Applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

UN "Model Regulation"	Not Applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed.
REACH Regulation Annex XVII Restriction	None of the ingredients is listed.
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Food yellow 3	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Polyvinyl pyrrolidone	Not Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

Continued...

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Bright pink

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Bright pink)*
Synonyms	*—*
CAS NO.	*—*
EC NO.	*—*
Chemical Formula	*—*

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	*—*

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Continued...

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.9003-39-8 2.Not Available 3.Not Available 4.Not Available	1.0	**Polyvinyl pyrrolidone**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	0.5	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.3520-42-1 2.222-529-8 3.Not Available 4.Not Available	1.5	**C.I.Acid Red 52**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	87.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

Continued...

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Continued...

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)

* Values for General Population

8.1.1 Occupational Exposure Limits (OEL)

➢ **Ingredient data**

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	Belgium	10mg/m³	Not data available
	VLEP (France)	10mg/m³	Not data available
	WELs(UK)	10mg/m³	Not data available
	Finland	20mg/m³	Not data available
	AGS(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	DFG(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	Ireland	10mg/m³	Not data available
	Poland	10mg/m³	Not data available
	Spain	10mg/m³	Not data available
	Switzerland	50mg/m³inhalable aerosol	100mg/m³inhalable aerosol

Remarks: 1. Inhalable fraction 2.15 minutes average value

➢ **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
Polyvinyl pyrrolidone	51mg/m³	560mg/m³	20000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	Not required under normal conditions of use.
Skin and body protection	Not required under normal conditions of use.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Bright pink	Viscosity	Dynamic	Not determined
Physical state	Liquid		Kinematic:	Not determined

Continued...

Odour	Odourless	**Vapour density (Air = 1)**	Not determined
Odour threshold	Not determined	**Density/Relative density**	Not determined
pH (as supplied)	Not determined	**Decomposition temperature**	Not determined
Melting point/freezing point(°C)	Not determined	**Particle Size**	Not determined
Flash point(Closed cup,°C)	Not determined	**Vapour pressure (kPa)**	Not determined
Flammability	Not flammable liquid	**Relative vapor density**	Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**	Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**	Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**	Not determined
Taste	Not determined	**Surface Tension (dyn/cm or mN/m)**	Not determined
Volatile Component (%vol)	Not determined	**Gas group**	Not determined
pH as a solution (1%)	Not determined	**VOC g/L**	Not determined

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No further relevant information available.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	No dangerous decomposition products known.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Water based dye ink	**TOXICITY**	**IRRITATION**
	No data available	No data available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg[1] Inhalation(rat) LC50: > 5.85mg/L 4h[1] Dermal (guinea pig) LD50: 45 ml/kg[1]	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
C.I.Acid Red 52	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

Continued...

Polyvinyl pyrrolidone	**TOXICITY**	**IRRITATION**
	Oral(mouse) LD50:100000mg/kg[2]	No data available
Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.Value obtained from manufacturer's SDS.	

11.2 Carcinogenicity

Component	Cas No.	IARC
Glycerol	56-81-5	Not listed
Water	7732-18-5	Not listed
C.I.Acid red 52	3520-42-1	Not listed
Polyvinylpyrrolidone	9003-39-8	Category 3
Acid Red 18	2611-82-7	Not listed

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	No data available	No data available	No data available	No data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/L
	EC50	48h	Aquatic invertebrates	1955mg/L
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/L
C.I.Acid red 52	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	EC50	48h	Aquatic invertebrates	120 mg/L
	EC50	168h	Aquatic plants other than algae	1000 mg/L
	EC10	168h	Aquatic plants other than algae	161.6-1000 mg/L
	BCF	672h	Fish	<=0.57 l/kg(conc.1690μg/L)
	BCF	672h	Fish	<=5.3 l/kg(conc.169μg/L)
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	NOEC	168h	Aquatic plants other than algae	100 mg/L

Continued...

	EC50	48h	Aquatic invertebrates	>100 mg/L
	EC0	48h	Aquatic invertebrates	100 mg/L
	LC50	96h	Fish	>1000 mg/L
	BCF	672h	Fish	<=0.55 l/kg(conc.0.474mg/L)
	BCF	672h	Fish	<=5.6 l/kg(conc.0.0474mg/L)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
C.I.Acid red 52	3520-42-1	Not readily biodegradable in water
Acid red 18	2611-82-7	Not readily biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244-0.046
C.I.Acid red 52	3520-42-1	No data available	LogKow=-2.2
Acid red 18	2611-82-7	No potential for bioaccumulation	LogKow=-2.267

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
C.I.Acid red 52	3520-42-1	No data available
Acid red 18	2611-82-7	Koc=3.16

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable
vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1.Do not allow wash water from cleaning or process equipment to enter drains. 2.It may be necessary to collect all wash water for treatment before disposal. 3.Recycle wherever possible. 4.Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

Continued...

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Applicable
IATA	Not Applicable

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Applicable
Class	Not Applicable
Label	Not Applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

UN "Model Regulation"	Not Applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed.
REACH Regulation Annex XVII Restriction	None of the ingredients is listed.
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Red 52	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Polyvinyl pyrrolidone	Not Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

Continued...

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Water based dye ink

Version:1.1

Creation Date:2023/06/21

Revision Date:2023/06/21

Color: Dark red

Country of Destination:EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Water based dye ink (Dark red)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazards

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3 Composition/information on ingredients

3.1 Substance

Not Applicable

3.2 Mixtures

- **Description:**Mixture of substances listed.

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor/ ATE
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	10.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.2611-82-7 2.220-036-2 3.Not Available 4.Not Available	5.0	**Acid Red 18**	Not Classified	Not Applicable	Not Applicable
1.3520-42-1 2.222-529-8 3.Not Available 4.Not Available	0.5	**C.I.Acid Red 52**	Not Classified	Not Applicable	Not Applicable
1.9003-39-8 2.Not Available 3.Not Available 4.Not Available	1.0	**Polyvinyl pyrrolidone**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	83.5	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Seek medical attention if necessary. Show this Safety Data Sheet (SDS) to the physician present.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Wash with water. If there are signs of irritation or other symptoms seek medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

No known symptoms or effects, acute or delayed.

4.3 Indication of any immediate medical attention and special treatment needed

No special immediate medical attention or special treatment needed.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO_2,powder or water spray.Fight larger fires with water spray or alcohol resistant foam.
Unsuitable extinguishing media	Water with full jet.

5.2 Special hazards arising from the substrate or mixture

May form irritating fumes in the air under fire.

5.3 Advice for firefighters

Continued...

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.
3	Use respiratory protective device against the effects of fumes/dust/aerosol.

6.4 Reference to other sections

1	See section 7 for information on safe handing.
2	See section 8 for information on personal protection equipment.
3	See section 13 for disposal in formation.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with eyes.
5	Avoid breathing vapour.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed .
2	Keep containers in a dry,cool and well-ventilated place.
3	Store away from incompatible materials and food stuff containers.
4	Store away from strong oxidants and strong acids.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Continued...

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)
Acid Red 18	Inhalation 24.7 mg/m³ (Systemic, Chronic) Dermal 7 mg/kg bw/day (Systemic, Chronic) Inhalation 3.7 mg/m³ (Systemic, Chronic)* Dermal 2.5 mg/kg bw/day (Systemic, Chronic)* Oral 2.5 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 10 mg/L (STP) 0.392 mg/kg sediment dw (Sediment (Fresh Water)) 0.0392 mg/kg sediment dw (Sediment (Marine)) 0.0197 mg/kg soil dw (Soil)

* Values for General Population

8.1.1 Occupational Exposure Limits (OEL)

➢ **Ingredient data**

Ingredient	Country	Limit value - Eight hours	Limit value - Short term
Glycerol, mist	Belgium	10mg/m³	Not data available
	VLEP (France)	10mg/m³	Not data available
	WELs(UK)	10mg/m³	Not data available
	Finland	20mg/m³	Not data available
	AGS(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	DFG(Germany)	200mg/m³ [1]	400mg/m³ [1][2]
	Ireland	10mg/m³	Not data available
	Poland	10mg/m³	Not data available
	Spain	10mg/m³	Not data available
	Switzerland	50mg/m³inhalable aerosol	100mg/m³inhalable aerosol

Remarks: 1. Inhalable fraction 2.15 minutes average value

➢ **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
Polyvinyl pyrrolidone	51mg/m³	560mg/m³	20000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	Not required under normal conditions of use.
Skin and body protection	Not required under normal conditions of use.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Dark red	Viscosity	Dynamic	Not determined
Physical state	Liquid		Kinematic:	Not determined

Continued...

Odour	Odourless	**Vapour density (Air = 1)**	Not determined
Odour threshold	Not determined	**Density/Relative density**	Not determined
pH (as supplied)	Not determined	**Decomposition temperature**	Not determined
Melting point/freezing point(°C)	Not determined	**Particle Size**	Not determined
Flash point(Closed cup,°C)	Not determined	**Vapour pressure (kPa)**	Not determined
Flammability	Not flammable liquid	**Relative vapor density**	Not determined
Evaporation rate	Not determined	**Partition coefficient n-octanol/ water**	Not determined
Upper Explosive Limit (%)	Not determined	**Auto-ignition temperature(°C)**	Not determined
Lower Explosive Limit (%)	Not determined	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not determined	**Oxidising properties**	Not determined
Taste	Not determined	**Surface Tension (dyn/cm or mN/m)**	Not determined
Volatile Component (%vol)	Not determined	**Gas group**	Not determined
pH as a solution (1%)	Not determined	**VOC g/L**	Not determined

9.2 Other information

No further relevant information available.

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No further relevant information available.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	No dangerous decomposition products known.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Water based dye ink	**TOXICITY**	**IRRITATION**
	No data available	No data available
Acid Red 18	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:>8000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg[1] Inhalation(rat) LC50: > 5.85mg/L 4h[1] Dermal (guinea pig) LD50: 45 ml/kg[1]	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)

Continued...

C.I.Acid Red 52	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
Polyvinyl pyrrolidone	**TOXICITY**	**IRRITATION**
	Oral(mouse) LD50:100000mg/kg[2]	No data available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.Value obtained from manufacturer's SDS.	

11.2 Carcinogenicity

Component	Cas No.	IARC
Acid Red 18	2611-82-7	Not listed
Glycerol	56-81-5	Not listed
Water	7732-18-5	Not listed
C.I.Acid red 52	3520-42-1	Not listed
Polyvinylpyrrolidone	9003-39-8	Category 3

11.2.1 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Water based dye ink	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	No data available	No data available	No data available	No data available
Glycerol	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	LC50	96h	Fish	54000 mg/L
	EC50	48h	Aquatic invertebrates	1955mg/L
	EC50	192h	Aquatic algae and cyanobacteria	2900mg/L
Acid Red 18	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**
	NOEC	168h	Aquatic plants other than algae	100 mg/L
	EC50	48h	Aquatic invertebrates	>100 mg/L
	EC0	48h	Aquatic invertebrates	100 mg/L
	LC50	96h	Fish	>1000 mg/L
	BCF	672h	Fish	<=0.55 l/kg(conc.0.474mg/L)
	BCF	672h	Fish	<=5.6 l/kg(conc.0.0474mg/L)
C.I.Acid red 52	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**

Continued...

	EC50	48h	Aquatic invertebrates	120 mg/L
	EC50	168h	Aquatic plants other than algae	1000 mg/L
	EC10	168h	Aquatic plants other than algae	161.6-1000 mg/L
	BCF	672h	Fish	<=0.57 l/kg(conc.1690μg/L)
	BCF	672h	Fish	<=5.3 l/kg(conc.169μg/L)

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)
Glycerol	56-81-5	Readily biodegradable in water
Acid red 18	2611-82-7	Not readily biodegradable in water
C.I.Acid red 52	3520-42-1	Not readily biodegradable in water

12.3 Bioaccumulative potential

Component	Cas No.	Bioaccumulative potential	Remarks
Glycerol	56-81-5	No potential for bioaccumulation	LogKow=-0.244 - 0.046
Acid red 18	2611-82-7	No potential for bioaccumulation	LogKow=-2.267
C.I.Acid red 52	3520-42-1	No data available	LogKow=-2.2

12.4 Mobility in soil

Component	Cas No.	Soil Organic Carbon-WaterPartitioning Coefficient (Koc)
Glycerol	56-81-5	Koc=1
Acid red 18	2611-82-7	Koc=3.16
C.I.Acid red 52	3520-42-1	No data available

12.5 Results of PBT and vPvB assessment

PBT	Not Applicable
vPvB	Not Applicable

12.6 Endocrine Disruption Properties

None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. 1.Do not allow wash water from cleaning or process equipment to enter drains. 2.It may be necessary to collect all wash water for treatment before disposal. 3.Recycle wherever possible. 4.Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Waste treatment options	No further relevant information available.
Sewage disposal options	No further relevant information available.

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	Not Applicable

Continued...

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	Not Applicable
IATA	Not Applicable

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	Not Applicable
Class	Not Applicable
Label	Not Applicable

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	Not Applicable

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Not Applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

Not dangerous according to the above specifications.

UN "Model Regulation"	Not Applicable

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation	None of the ingredients is listed.
REACH Regulation Annex XVII Restriction	None of the ingredients is listed.
REACH Regulation Annex XIV Authorization List	None of the ingredients is listed.

15.2 Chemical safety assessment

A Chemical Safe Assessment has not been carried out.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Acid red 18	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Red 52	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Polyvinyl pyrrolidone	Not Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

Continued...

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2023/06/21
Revision Date	2023/06/21
Reason for revision	—

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas : Chemical Abstracts Service

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

16.3 Further information

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

DISCLAIMER OF LIABILITY:

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

上海纳诺微新材料科技有限公司

Shanghai NNW New Materials Technology Co., Ltd.

Safety Data Sheet

Highlighter ink-dye

Version：1.1

Creation Date：2022/09/05

Revision Date：2022/09/05

Color: green

Country of Destination：EU

***Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)**

SECTION 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	*Highlighter ink-dye (green)*
Synonyms	—
CAS NO.	—
EC NO.	—
Chemical Formula	—

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	*To write*
Uses advised against	—

1.3 Details of the supplier of the Safety Data Sheet

Name of the company	*Shanghai NNW New Materials Technology Co., Ltd.*
Address of the company	*ROOM 402, Buildiing17, Lane 268, Lingxin Road, Changning District Shanghai, CHINA*
Post code	*200335*
Telephone number	*021-64476059*
Fax number	*021-64476096*
Email	*sales@nnwchina.com*

1.4 Emergency phone number

Emergency phone number	*+8613311812200*

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation(EC) No 1272/2008	*The product is not classified according to the CLP regulation.*

2.2 Label elements

Hazard pictogram(s)	*Not Applicable*
Signal word	*Not Applicable*
Hazard statements	*Not Applicable*

2.3 Precautionary statements

Prevention	Not Applicable
Response	Not Applicable
Storage	Not Applicable
Disposal	Not Applicable

2.4 Other hazard

Not Applicable

SECTION 3 Composition/information on ingredients

3.1 Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC)No 1272/2008 [CLP] and amendments	Nanoform Particle Characteristics	SCL/M-Factor /ATF
1.56-81-5 2.200-289-5 3.Not Available 4.Not Available	15.0	**Glycerol**	Not Classified	Not Applicable	Not Applicable
1.6358-69-6 2.228-783-6 3.Not Available 4.Not Available	0.5-1.0	**Solvent Green 7**	Not Classified	Not Applicable	Not Applicable
1.2650-18-2 2.220-168-0 3.Not Available 4.Not Available	0.2-0.5	**C.I.Acid Blue 9**	Not Classified	Not Applicable	Not Applicable
1.7732-18-5 2.228-783-6 3.Not Available 4.Not Available	83.5-84.3	**Water, distilled, conductivity or of similar purity**	Not Classified	Not Applicable	Not Applicable

SECTION 4 First aid measures

4.1 Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	Use extinguishing media suitable forsurrounding area.
Unsuitable extinguishing media	There is no restriction on the type ofextinguisher which may be used.

5.2 Special hazards arising from the substrate or mixture

No further relevant information available.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus(MSHA/NIOSH approved or equivalent)and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

6.2 Environmental precautions

1	Do not allow to enter sewers/ surface or ground water.
2	Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

1	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
2	Dispose contaminated material as waste according to item 13.

SECTION 7 Handling and storage

7.1 Precautions for handling

- **Protective measure**

1	Ensure good ventilation/exhaustion at the workplace.
2	Keep receptacles tightly sealed.
3	Keep away from heat and direct sunlight.
4	Avoid contact with skin and eyes.
5	For the general occupational hygienic measures refer to section 8.

- **Information about fire - and explosion protection**

Normal measures for preventive fire protection

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms	Store in a cool location.
Information about storage in one common storage facility	Store away from foodstuffs.
Further information about storage conditions	Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

See section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Glycerol	Inhalation 220 mg/m³ (Local, Chronic) Inhalation 132 mg/m³ (Local, Chronic) *	0.885mg/L (Water (Fresh)) 0.088 mg/L (Water - Intermittent release) 8.85 mg/L (Water (Marine)) 3.3 mg/kg sediment dw (Sediment (Fresh Water)) 0.33 mg/kg sediment dw (Sediment (Marine)) 1000 mg/L (STP) 0.141mg/kg soil dw (Soil)

Continued...

Solvent Green 7	Inhalation 16.4 mg/m³ (Local, Chronic) Dermal 0.03 mg/kg bw/day (Systemic, Chronic) Inhalation 2.9 mg/m³ (Local, Chronic)* Dermal 0.0357 mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 2.06 mg/kg sediment dw (Sediment (Fresh Water)) 0.206 mg/kg sediment dw (Sediment (Marine)) 0.353 mg/kg soil dw (Soil)
C.I.Acid Blue 9	Inhalation 88.3mg/m³(Systemic, Chronic) Dermal 17.67 mg/kg bw/day (Systemic, Chronic) Dermal 6.31 mg/kg bw/day (Systemic, Chronic)* Inhalation 19 mg/m³(Systemic, Chronic)* Oral 6.31mg/kg bw/day (Systemic, Chronic)*	0.1 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 0.01 mg/L (Water (Marine)) 0.1 mg/L (Marine Water - Intermittent release) 0.363 mg/kg sediment dw (Sediment (Fresh Water)) 0.0363 mg/kg sediment dw (Sediment (Marine)) 1mg/kg soil dw (Soil) 10 mg/L (STP)

** Values for General Population*

8.1.1 Occupational Exposure Limits (OEL)

- **Ingredient data**

Ingredient	Source	TWA	STEL	Peak
Glycerol, mist	AGS (Germany)	200 mg/m³ [1]	400mg/m³ [1][2]	Not Available
	DFG(Germany)	200 mg/m³ [1]	400mg/m³ [1][2]	Not Available
	MAK(Germany)	200I mg/m³	Not Available	I(2)
	VLEP (France)	10 mg/m³	Not Available	Not Available
	WELs(UK)	10 mg/m³	Not Available	Not Available

Remarks: 1..Inhalable fraction 2. 15 minutes average value

- **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
Glycerol	45mg/m³	180mg/m³	1100mg/m³
C.I.Acid Blue 9	30mg/m³	330mg/m³	2000mg/m³

8.2 Engineering controls

General protective and hygienic measures	The usual precautionary measures are to be adhered to when handling chemicals.

8.3 Personal protection equipment

General requirement	
Eye protection	Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US).
Hand protection	Wear protective gloves(such as butyl rubber, passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	No special requirements.
Skin and body protection	No special requirements.
Other protection	No special equipment needed when handling small quantities.

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Green	**Viscosity**	**Dynamic**	Not Available
Physical state	Liquid		**Kinematic:**	Not Available
Odour	Odourless	**Vapour density (Air = 1)**		Not Available
Odour threshold	Not Available	**Density/Relative density**		Not Available
pH (as supplied)	Not Available	**Decomposition temperature**		Not Available
Melting point/freezing point(°C)	Not Available	**Particle Size**		Not Available
Flash point(Closed cup,°C)	Not Available	**Vapour pressure (kPa)**		Not Available

Continued...

Flammability	Not Available	**Relative vapor density**	Not Available
Evaporation rate	Not Available	**Partition coefficient n-octanol/ water**	Not Available
Upper Explosive Limit (%)	Not Available	**Auto-ignition temperature(°C)**	Not Available
Lower Explosive Limit (%)	Not Available	**Explosive properties**	Product does not present anexplosion hazard
Self-igniting	Not Available	**Oxidising properties**	Not Available
Taste	Not Available	**Surface Tension (dyn/cm ormN/m)**	Not Available
Volatile Component (%vol)	Not Available	**Gas group**	Not Available
pH as a solution (1%)	Not Available	**VOC g/L**	Not Available

9.2 Other information

No further relevant information available

SECTION 10 Stability and reactivity

10.1 Stability and reactivity

Reactivity	No decomposition if used according to specifications.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No dangerous reactions known.
Conditions to avoid	No further relevant information available.
Incompatible materials	No further relevant information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.
Ingestion	The material has not been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Highlighter ink-dye	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
Glycerol	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:> 11500 mg/kg Inhalation(rat) LC50: > 5.85mg/l 4h Dermal (guinea pig) LD50: 45 ml/kg	Skin (rabbit):non-irritating(Draize) Eye (rabbit):non-irritating (Draize)
Solvent Green 7	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50:15000 mg/kg Dermal (guinea pig) LD50: 2000 mg/kg	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)
C.I.Acid Blue 9	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >1900 mg/kg[1]	Eye: no adverse effect observed (not irritating)(Draize) Skin: no adverse effect observed (not irritating)(Draize)

Continued...

11.2 Carcinogenicity

Component	Cas No.	IARC	NTP
Glycerol	56-81-5	Not Listed	Not Listed
Solvent Green 7	6358-69-6	Not Listed	Not Listed
C.I.Acid Blue 9	2650-18-2	Not Listed	Not Listed
Water	7732-18-5	Not Listed	Not Listed

11.2.1 Endocrine Disruption Properties

Not Available

11.3 Primary irritant effect

Carcinogenicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12 Ecological information

12.1 Toxicity

Highlighter ink-dye	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Glycerol	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	885mg/l	1
	EC50	24h	Crustacea	10000mg/l	2
	EC50	72h	Algae or other aquatic plants	2.9mg/l	4
Solvent Green 7	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC	48h	Crustacea	100 mg/l	2
	LC50	96h	Fish	100 mg/l	2
	EC50	48h	Crustacea	100-500 mg/l	2
	EC50	168h	Aquatic plants other than alga	100 mg/l	2
C.I.Acid Blue 9	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC	504h	Crustacea	>10mg/l	2
	LC50	96h	Fish	>100mg/l	2
	EC50	48h	Crustacea	>100mg/l	2
	EC50	504h	Aquatic plants other than alga	>200mg/l	2
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data				

12.2 Persistence and degradability

Component	Cas No.	Persistence (water/soil)	Persistence (air)
Glycerol	56-81-5	High	Low

Continued...

Solvent Green 7	*6358-69-6*	*Middling*	*Low*
C.I.Acid Blue 9	*2650-18-2*	*Low*	*Low*

12.3 Bioaccumulative potential

Component	*Cas No.*	*Bioaccumulative potential*	*Remarks*
Glycerol	*56-81-5*	*Low*	*Log Kow=-1.76*
Solvent Green 7	*6358-69-6*	*Low*	*Log Kow<=3*

12.4 Mobility in soil

Component	*Cas No.*	*Mobility in soil*	*Soil Organic Carbon-Water Partitioning Coefficient (Koc)*
Glycerol	*56-81-5*	*High*	*Koc=23.74*
Solvent Green 7	*6358-69-6*	*Middling*	*Koc=3.313 ± 0.007*

12.5 Results of PBT and vPvB assessment

PBT	*Not Available*
vPvB	*Not Available*

12.6 Endocrine Disruption Properties

Not Available

12.7 Other adverse effects

No further relevant information available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Product / Packaging disposal	*Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.* *1. Do not allow wash water from cleaning or process equipment to enter drains.* *2. It may be necessary to collect all wash water for treatment before disposal.* *3. Recycle wherever possible* *4. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.*
Waste treatment options	*Not Available*
Sewage disposal options	*Not Available*

SECTION 14 Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA	*Not Available*

14.2 UN proper shipping name

ADR/RID/ADN, IMDG	*Not Available*
IATA	*Not Available*

14.3 Transport hazard class(es)

ADR/RID/ADN, IMDG, IATA	*Not Available*
Class	*Not Available*
Label	*Not Available*

14.4 Packing group

ADR/RID/ADN, IMDG, IATA	*Not Available*

Continued...

14.5 Environmental hazards

Not Applicable

14.6 Special precautions for user

Warning	Not Available
Hazard identification number (Kemler code)	Not Available
EMS Number:	Not Available
Stowage Category	Not Available

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not Applicable

14.8 Transport/Additional information

UN "Model Regulation"	Not Available

SECTION 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU	
Named dangerous substances -ANNEX I	None of the ingredients is listed
Other regulations, limitations and prohibitive regulations	
SVHC CandidateList of REACH Regulation Annex XIV Authorisation(06/10/2022)	None of the ingredients is listed
REACH Regulation Annex XVII Restriction(11/09/2021)	None of the ingredients is listed
REACH Regulation Annex XIV Authorization List(04/11/2022)	None of the ingredients is listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.3 International chemical inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Glycerol	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Water	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
C.I.Acid Blue 9	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed
Solvent Green 7	Listed	Listed	Listed	Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

SECTION 16 Other information

16.1 Information on revision

Creation Date	2022/09/05
Revision Date	2022/09/05
Reason for revision	——

Continued...

16.2 Abbreviations and acronyms

SCL: Specific Concentration limits

ATE: Acute Toxicity Estimates

Cas: Chemical Abstracts Service

PC－TWA: Permissible Concentration-Time Weighted Average

PC－STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

NOEC: No Observed Effect Concentration

BCF: BioConcentration Factors

ELINCS: European List of Notified Chemical Substances

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

16.3 Disclaimer

This Safety Data Sheet (SDS) was prepared according to REACH Regulation The data included was derived from international authoritative data base and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference.Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.