

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M White [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date :  
 File No. : 010419A Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Titanium dioxide	13463-67-7	Registered	2366755	10- 30
Ethylene glycol	107-21-1	Registered	2034733	< 10
Ethyl alcohol	64-17-5	Registered	2005786	< 10
2-Propanol	67-63-0	Registered	2006617	< 10
Additives	Registered	Registered	Registered	< 10
Resins	Registered	Registered	Registered	< 10

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Additive>

PHYSICAL FORM : crystalline powder, granules, gel

<Ethyl alcohol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, liver damage, central nervous system depression

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

<2-Propanol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, eye irritation, central nervous system depression

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

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## 4. FIRST-AID MEASURES

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### Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

### Skin contact:

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

### Eye contact:

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

### Ingestion:

If swallowed, seek medical advice, and show the MSDS to the physician then.

[Ink quantity of product : about 5.4g]

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## 5. FIRE-FIGHTING MEASURES

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Fire and explosion measures : Slight fire hazard.

### Extinguishing media:

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.

Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products.

Stay upwind and keep out of low areas.

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## 6. ACCIDENTAL RELEASE MEASURES

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Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.

: In accordance with national, state and local regulations.

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## 7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards.

Keep separated from incompatible substances.

### Handling:

Technical measures : Don't swallow ink.

: Recap after use.

: Keep out of the reach of children.

: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

### Storage:

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.

: Do not leave the products in high temperature space.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halo carbons, halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive
halo carbons, metals, metal salts, oxidizing materials, halogens, peroxides, acids, metal oxides, bases, acids, metals, oxidizing materials, combustible materials, halogens, peroxides, bases, metal salts	Ethyl alcohol  2-Propanol

Packaging materials : Not applicable.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3 TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m3 divided by % SiO2) 1000ppm(1900mg/m3) TWA 400 ppm TWA, 500ppm STEL	Titanium dioxide Additive  Ethyl alcohol 2-Propanol
ACGIH	10mg/m3 TWA ceiling 100mg/m3 (particulate)(aerosol) 10mg/m3 TWA(inhalable fraction) 3mg/m3 TWA(respirable fraction) (no asbestos and <1% crystalline silica) 1000ppm STEL 200ppm TWA, 400ppm STEL	Titanium dioxide Ethylene glycol Additive  Ethyl alcohol 2-Propanol
EC	6mg/m3 52mg/m3(20ppm) EC MAK TWA(skin) 104mg/m3(40ppm) EC MAK STEL(skin) 1000ppm	Titanium dioxide Ethylene glycol  Ethyl alcohol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: White.
Odor	: None odor.
pH	: 8.3
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.3 / 25 C

Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 68%

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## 10. STABILITY AND REACTIVITY

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Stability	: Stability.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.
Materials to avoid	: (Information of components.)
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halo carbons, halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive
halo carbons, metals, metal salts, oxidizing materials, halogens, peroxides, acids, metal oxides, bases, combustible materials	Ethyl alcohol
acids, metals, oxidizing materials, combustible materials, halogens, peroxides, bases, metal salts	2-Propanol
Hazardous decomposition products	: (Information of components.)
oxides of carbon, water	common decomposition products
oxides of titanium.	Titanium dioxide
crystalline silica.miscellaneous decomposition products.	Additive

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## 11.TOXICOLOGICAL INFORMATION

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(Information of components)

Acute toxicity		
Ingestion LD50	>24000mg/kg-Rat 4700mg/kg-Rat 3160mg/kg-Rat 3450mg/kg-Mouse 3600mg/kg-Mouse	Titanium dioxide Ethylene glycol Additive Ethyl alcohol 2-Propanol
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat 20000ppm-10H-Rat 11100ppm-4H-Mouse	Titanium dioxide Ethyl alcohol 2-Propanol
Skin LD50	9530uL/kg-Rabbit 12800mg/kg-Rabbit	Ethylene glycol 2-Propanol
Local effects	Irritant;inhalation, skin, eye Irritant;inhalation, eye	Ethylene glycol / Ethyl alcohol 2-Propanol

**Chronic toxicity and long term toxicity**

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).

Ethylene glycol

pneumoconiosis

Additive

The liquid defats the skin. The substance may have effects on the upper respiratory tract and central nervous system, resulting in irritation, headache, fatigue and lack of concentration.

Ethyl alcohol

The liquid defats the skin.

2-Propanol

**Signs and Symptoms of overexposure and aggravated by exposure**

Inhalation	irritation,cough	Titanium dioxide / Ethylene glycol Additive / Ethyl alcohol
	irritation,nausea	2-Propanol
Skin contact	irritation,dry	Ethylene glycol / Additive Ethyl alcohol
	irritation,absorption	2-Propanol
Eye contact	irritation,redness	Titanium dioxide / Ethylene glycol Additive / Ethyl alcohol
	irritation,pain	2-Propanol
Ingestion	physiologically inert,intestinal obstruction nausea,vomiting fever,gastrointestinal rash,vomiting nausea,stomach pain	Titanium dioxide  Ethylene glycol Additive Ethyl alcohol 2-Propanol
Specific effects	IARC Group 2B IARC Group 3 IARC Group 1	Titanium dioxide Additive / 2-Propanol Ethyl alcohol

**12. ECOLOGICAL INFORMATION**

Not available.

**13. DISPOSAL CONSIDERATIONS**

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

**14. TRANSPORT INFORMATION**

HS Code : 960810

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## 15. REGULATORY INFORMATION

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### Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol / Ethyl alcohol / 2-Propanol

### EU labeling

25%≤Xn;R22

Ethylene glycol

F;R11

Ethyl alcohol

F;R11, Xi;R36, R67

2-Propanol

### CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive / 2-Propanol

0.1%over

Ethyl alcohol

### Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

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## 16. OTHER INFORMATION

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This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Red [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date :  
 File No. : 010420A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature:      Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Titanium dioxide	13463-67-7	Registered	2366755	< 10
Ethylene glycol	107-21-1	Registered	2034733	< 10
Ethyl alcohol	64-17-5	Registered	2005786	< 10
Coloring agent	Registered	Registered	Registered	< 10
Additives	Registered	Registered	Registered	< 10
Resins	Registered	Registered	Registered	< 10

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Ethyl alcohol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, liver damage, central nervous system depression

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: cent

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

**Skin contact:**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye contact:**

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:**

If swallowed, seek medical advice, and show the MSDS to the physician then.

[Ink quantity of product : about 5.4g]

**5. FIRE-FIGHTING MEASURES**

Fire and explosion measures : Slight fire hazard.

**Extinguishing media:**

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.

Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products.

Stay upwind and keep out of low areas.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.

: In accordance with national, state and local regulations.

**7. HANDLING AND STORAGE**

Store and handle in accordance with all current regulations and standards.

Keep separated from incompatible substances.

**Handling:**

Technical measures : Don't swallow ink.

: Recap after use.

: Keep out of the reach of children.

: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

**Storage:**

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.

: Do not leave the products in high temperature space.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials : Coloring agent / Resin

metals : Titanium dioxide

oxidizing materials, bases, acids, : Ethylene glycol

halo carbons, metals, metal salts, : Ethyl alcohol

halogens, acids, combustible materials, : Additive

Packaging materials : Not applicable.



## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m <sup>3</sup> TWA (Total dust) 1000ppm(1900mg/m <sup>3</sup> ) TWA 20mppcf TWA (<1% crystalline silica) (80mg/m <sup>3</sup> divided by % SiO <sub>2</sub> )	Titanium dioxide Ethyl alcohol Additive
ACGIH	10mg/m <sup>3</sup> TWA ceiling 100mg/m <sup>3</sup> (particulate)(aerosol) 1000ppm STEL 10mg/m <sup>3</sup> TWA(inhalable fraction) 3mg/m <sup>3</sup> TWA(respirable fraction) (no asbestos and <1% crystalline silica)	Titanium dioxide Ethylene glycol Ethyl alcohol Additive
EC	6mg/m <sup>3</sup> 52mg/m <sup>3</sup> (20ppm) EC MAK TWA(skin), 104mg/m <sup>3</sup> (40ppm) EC MAK STEL(skin) 1000ppm	Titanium dioxide Ethylene glycol  Ethyl alcohol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Red.
Odor	: None odor.
pH	: 8.3
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.1 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 75%

## 10. STABILITY AND REACTIVITY

Stability	: Stability.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

## Materials to avoid : (Information of components.)

oxidizing materials	Coloring agent / Resin
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halo carbons, metals, metal salts, oxidizing materials, halogens, peroxides, acids, metal oxides, bases, combustible materials	Ethyl alcohol
halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive

## Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of titanium.	Titanium dioxide
oxides of nitrogen.	Coloring agent
miscellaneous decomposition products.	Resin
crystalline silica.	Additive

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**11. TOXICOLOGICAL INFORMATION**


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## (Information of components)

## Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 4700mg/kg-Rat 3450mg/kg-Mouse 3160mg/kg-Rat	Titanium dioxide Ethylene glycol Ethyl alcohol Additive
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat 20000ppm-10H-Rat	Titanium dioxide Ethyl alcohol
Skin LD50	9530uL/kg-Rabbit	Ethylene glycol

Local effects                      Irritant:inhalation, skin, eye                      Ethylene glycol / Ethyl alcohol

## Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).	Ethylene glycol
The liquid defats the skin. The substance may have effects on the upper respiratory tract and central nervous system, resulting in irritation, headache, fatigue and lack of concentration.	Ethyl alcohol
pneumoconiosis	Additive

## Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough  irritation headache,nausea	Titanium dioxide Ethylene glycol / Ethyl alcohol Additive Coloring agent Resin
Skin contact	redness,swelling of skin irritation irritation,dry	Coloring agent Resin Ethylene glycol / Ethyl alcohol Additive
Eye contact	irritation irritation,redness	Resin Titanium dioxide / Ethylene glycol Ethyl alcohol / Additive

Ingestion	physiologically inert,intestinal obstruction nausea,vomiting digestive discomfort nausea,vomiting rash,vomiting	Titanium dioxide Coloring agent Resin Ethylene glycol Ethyl alcohol
Specific effects	IARC Group 3 IARC Group 2B IARC Group 1	Additive Titanium dioxide Ethyl alcohol

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## 12. ECOLOGICAL INFORMATION

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Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

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## 14. TRANSPORT INFORMATION

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HS Code : 960810

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## 15. REGULATORY INFORMATION

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Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol / Ethyl alcohol

EU labeling

25%≤Xn;R22

Ethylene glycol

F;R11

Ethyl alcohol

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive

0.1%over

Ethyl alcohol

Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

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## 16. OTHER INFORMATION

---

This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Light blue [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date :  
 File No. : 010421A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature:                      Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Titanium dioxide	13463-67-7	Registered	2366755	10- 30
Ethylene glycol	107-21-1	Registered	2034733	< 10
Ethyl alcohol	64-17-5	Registered	2005786	< 10
Additives	Registered	Registered	Registered	< 10
Resins	Registered	Registered	Registered	< 10
Coloring agent	Registered	Registered	Registered	< 1

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Additive>

PHYSICAL FORM : crystalline powder, granules, gel

<Ethyl alcohol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, liver damage, central nervous system depression

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

<Coloring agent>

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

#### Skin contact:

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

#### Eye contact:

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

#### Ingestion:

If swallowed, seek medical advice, and show the MSDS to the physician then.  
[Ink quantity of product : about 5.4g]

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## 5. FIRE-FIGHTING MEASURES

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Fire and explosion measures : Slight fire hazard.

#### Extinguishing media:

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.

Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products.

Stay upwind and keep out of low areas.

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## 6. ACCIDENTAL RELEASE MEASURES

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Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.

: In accordance with national, state and local regulations.

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## 7. HANDLING AND STORAGE

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Store and handle in accordance with all current regulations and standards.

Keep separated from incompatible substances.

#### Handling:

Technical measures : Don't swallow ink.

: Recap after use.

: Keep out of the reach of children.

: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

#### Storage:

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.

: Do not leave the products in high temperature space.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals Titanium dioxide

oxidizing materials, bases, acids, Ethylene glycol

reducing agents, metals

halo carbons, halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive
halo carbons, metals, metal salts, oxidizing materials, halogens, peroxides, acids, metal oxides, bases, oxidizing materials	Ethyl alcohol
Packaging materials	Coloring agent
: Not applicable.	

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3 TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m3 divided by % SiO2) 1000ppm(1900mg/m3) TWA 5mg/m3(Respirable flaction), 15mg/m3(Total dust) [Nuisance Dust]	Titanium dioxide Additive  Ethyl alcohol Coloring agent
ACGIH	10mg/m3 TWA ceiling 100mg/m3 (particulate)(aerosol) 10mg/m3 TWA(inhalable fraction) 3mg/m3 TWA(respirable fraction) (no asbestos and <1% crystalline silica) 1000ppm STEL 10mg/m3 TWA	Titanium dioxide Ethylene glycol Additive  Ethyl alcohol Coloring agent
EC	6mg/m3 52mg/m3(20ppm) EC MAK TWA(skin) 104mg/m3(40ppm) EC MAK STEL(skin) 1000ppm	Titanium dioxide Ethylene glycol  Ethyl alcohol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Light blue.
Odor	: None odor.
pH	: 8.3
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.2 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 71%

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## 10. STABILITY AND REACTIVITY

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Stability	: Stability.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.
Materials to avoid	: (Information of components.)
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halo carbons, halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive
halo carbons, metals, metal salts, oxidizing materials, halogens, peroxides, acids, metal oxides, bases, combustible materials	Ethyl alcohol
oxidizing materials	Coloring agent
Hazardous decomposition products	: (Information of components.)
oxides of carbon, water	common decomposition products
oxides of titanium.	Titanium dioxide
crystalline silica.miscellaneous decomposition products.	Additive
oxides of nitrogen.	Coloring agent

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## 11.TOXICOLOGICAL INFORMATION

---

(Information of components)

### Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 4700mg/kg-Rat 3160mg/kg-Rat 3450mg/kg-Mouse >5000mg/kg-Rat	Titanium dioxide Ethylene glycol Additive Ethyl alcohol Coloring agent
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat 20000ppm-10H-Rat	Titanium dioxide Ethyl alcohol
Skin LD50	9530uL/kg-Rabbit	Ethylene glycol

Local effects                      Irritant:inhalation, skin, eye                      Ethylene glycol / Ethyl alcohol

### Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).	Ethylene glycol
pneumoconiosis	Additive
The liquid defats the skin. The substance may have effects on the upper respiratory tract and central nervous system, resulting in irritation, headache, fatigue and lack of concentration.	Ethyl alcohol

### Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough	Titanium dioxide / Ethylene glycol Additive / Ethyl alcohol
	irritation	Coloring agent

Skin contact	irritation,dry	Ethylene glycol / Additive Ethyl alcohol
Eye contact	irritation,redness  irritation	Titanium dioxide / Ethylene glycol Additive / Ethyl alcohol Coloring agent
Ingestion	physiologically inert,intestinal obstruction nausea,vomiting fever,gastrointestinal rash,vomiting gastric disturbances	Titanium dioxide  Ethylene glycol Additive Ethyl alcohol Coloring agent
Specific effects	IARC Group 2B IARC Group 3 IARC Group 1	Titanium dioxide Additive Ethyl alcohol

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## 12. ECOLOGICAL INFORMATION

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Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

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## 14. TRANSPORT INFORMATION

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HS Code : 960810

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## 15. REGULATORY INFORMATION

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### Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol / Ethyl alcohol

### EU labeling

25%≤Xn;R22

Ethylene glycol

F;R11

Ethyl alcohol

### CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive

0.1%over

Ethyl alcohol

### Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

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## 16. OTHER INFORMATION

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This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.



# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Violet [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date :  
 File No. : 010422A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature:      Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Resins	Registered	Registered	Registered	10- 30
Titanium dioxide	13463-67-7	Registered	2366755	< 10
Ethylene glycol	107-21-1	Registered	2034733	< 10
Additives	Registered	Registered	Registered	< 10
Coloring agents	Registered	Registered	Registered	< 10
Polyoxyethylene nonylphenyl	9016-45-9	Registered	Registered	< 1

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Resin>

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Polyoxyethylene nonylphenyl ether>

MAJOR HEALTH HAZARDS: eye irritation

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

**Skin contact:**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye contact:**

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:**

If swallowed, seek medical advice, and show the MSDS to the physician then.  
[Ink quantity of product : about 5.4g]

**5. FIRE-FIGHTING MEASURES**

Fire and explosion measures : Slight fire hazard.

**Extinguishing media:**

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.  
Use extinguishing agents appropriate for surrounding fire.  
Avoid inhalation of material or combustion by-products.  
Stay upwind and keep out of low areas.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.  
: In accordance with national, state and local regulations.

**7. HANDLING AND STORAGE**

Store and handle in accordance with all current regulations and standards.  
Keep separated from incompatible substances.

**Handling:**

Technical measures : Don't swallow ink.  
: Recap after use.  
: Keep out of the reach of children.  
: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

**Storage:**

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.  
: Do not leave the products in high temperature space.  
: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids,	Ethylene glycol
halogens, acids, combustible materials,	Additive

Packaging materials : Not applicable.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m <sup>3</sup> TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m <sup>3</sup> divided by % SiO <sub>2</sub> )	Titanium dioxide Additive
ACGIH	10mg/m <sup>3</sup> TWA ceiling 100mg/m <sup>3</sup> (particulate)(aerosol) 10mg/m <sup>3</sup> TWA(inhalable fraction) 3mg/m <sup>3</sup> TWA(respirable fraction) (no asbestos and <1% crystalline silica)	Titanium dioxide Ethylene glycol Additive
EC	10mg/m <sup>3</sup> TWA 6mg/m <sup>3</sup> 52mg/m <sup>3</sup> (20ppm) EC MAK TWA(skin), 104mg/m <sup>3</sup> (40ppm) EC MAK STEL(skin)	Coloring agent Titanium dioxide Ethylene glycol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Violet.
Odor	: None odor.
pH	: 8.3
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.1 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 75%

## 10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.  
Avoid contact with incompatible materials.

## Materials to avoid : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive

## Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen, cyanides, aldehydes, corrosive acrolein, various organic fragments	Resin
oxides of titanium.	Titanium dioxide
miscellaneous decomposition products.	Coloring agent
crystalline silica.	Additive

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## 11. TOXICOLOGICAL INFORMATION

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## (Information of components)

## Acute toxicity

Ingestion LD50	1000mg/kg-Mouse	Resin
	>24000mg/kg-Rat	Titanium dioxide
	4700mg/kg-Rat	Ethylene glycol
	3160mg/kg-Rat	Additive
	≥ 5000mg/kg-Rat	Coloring agent
Inhalation LC50	2950mg/kg-Mouse	Polyoxyethylene nonylphenyl ether
	1310mg/kg-Rat	
Skin LD50	6820mg/m <sup>3</sup> -4H-Rat	Titanium dioxide
	9530uL/kg-Rabbit	Ethylene glycol

Local effects	Irritant:inhalation, skin, eye	Ethylene glycol
	Irritant:eye	Polyoxyethylene nonylphenyl ether

## Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).	Ethylene glycol
pneumoconiosis	Additive

## Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough	Resin / Titanium dioxide Ethylene glycol / Additive
	irritation	Coloring agent Polyoxyethylene nonylphenyl ether
Skin contact	mechanical abrasion,irritation	Resin Polyoxyethylene nonylphenyl ether
	irritation	Ethylene glycol / Additive
	irritation,dry burns,corrosive	Coloring agent
Eye contact	irritation	Resin
	irritation,redness	Titanium dioxide / Ethylene glycol Additive
	irritation,eye damage	Polyoxyethylene nonylphenyl ether

Ingestion	physiologically inert,intestinal obstruction nausea,vomiting digestive disorders,diarrhea	Titanium dioxide  Ethylene glycol / Coloring agent Polyoxyethylene nonylphenyl ether
Specific effects	IARC Group 3 IARC Group 2B	Resin / Additive Titanium dioxide

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## 12. ECOLOGICAL INFORMATION

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Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

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## 14. TRANSPORT INFORMATION

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HS Code : 960810

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## 15. REGULATORY INFORMATION

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Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol

EU labeling

25%≤Xn;R22

Ethylene glycol

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive

Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

---

## 16. OTHER INFORMATION

---

This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Fluorescent yellow [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date  
 File No. : 010423A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature: Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Resins	Registered	Registered	Registered	10- 30
Additives	Registered	Registered	Registered	10- 30
Titanium dioxide	13463-67-7	Registered	2366755	< 10
Ethylene glycol	107-21-1	Registered	2034733	< 10
Coloring agent	Registered	Registered	Registered	< 10
Polyoxyethylene nonylphenyl	9016-45-9	Registered	Registered	< 1

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Resin>

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Polyoxyethylene nonylphenyl ether>

MAJOR HEALTH HAZARDS: eye irritation

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

**Skin contact:**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye contact:**

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:**

If swallowed, seek medical advice, and show the MSDS to the physician then.  
[Ink quantity of product : about 5.4g]

**5. FIRE-FIGHTING MEASURES**

Fire and explosion measures : Slight fire hazard.

**Extinguishing media:**

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.  
Use extinguishing agents appropriate for surrounding fire.  
Avoid inhalation of material or combustion by-products.  
Stay upwind and keep out of low areas.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.  
: In accordance with national, state and local regulations.

**7. HANDLING AND STORAGE**

Store and handle in accordance with all current regulations and standards.  
Keep separated from incompatible substances.

**Handling:**

Technical measures : Don't swallow ink.  
: Recap after use.  
: Keep out of the reach of children.  
: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

**Storage:**

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.  
: Do not leave the products in high temperature space.  
: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials	Resin
	Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids,	Ethylene glycol
halogens, acids, combustible materials,	Additive

Packaging materials : Not applicable.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m <sup>3</sup> TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m <sup>3</sup> divided by % SiO <sub>2</sub> )	Titanium dioxide Additive
ACGIH	10mg/m <sup>3</sup> TWA ceiling 100mg/m <sup>3</sup> (particulate)(aerosol) 10mg/m <sup>3</sup> TWA(inhalable fraction) 3mg/m <sup>3</sup> TWA(respirable fraction) (no asbestos and <1% crystalline silica)	Titanium dioxide Ethylene glycol Additive
EC	6mg/m <sup>3</sup> 52mg/m <sup>3</sup> (20ppm) EC MAK TWA(skin), 104mg/m <sup>3</sup> (40ppm) EC MAK STEL(skin)	Titanium dioxide Ethylene glycol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Fluorescent yellow.
Odor	: None odor.
pH	: 8.0
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.2 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 62%

## 10. STABILITY AND REACTIVITY

Stability	: Stability.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.
Materials to avoid	: (Information of components.)
oxidizing materials	Resin Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide



oxidizing materials, bases, acids, reducing agents, metals  
Ethylene glycol  
halogens, acids, combustible materials, metals, metal salts, oxidizing materials  
Additive

Hazardous decomposition products : (Information of components.)

oxides of carbon, water  
common decomposition products  
oxides of nitrogen, cyanides, aldehydes,  
Resin  
corrosive acrolein, various organic fragments  
oxides of titanium.  
Titanium dioxide  
crystalline silica.  
Additive

## 11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	1000mg/kg-Mouse >24000mg/kg-Rat 4700mg/kg-Rat 3160mg/kg-Rat 550mg/kg-Rat 1310mg/kg-Rat	Resin Titanium dioxide Ethylene glycol Additive Coloring agent Polyoxyethylene nonylphenyl ether
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat	Titanium dioxide
Skin LD50	9530uL/kg-Rabbit	Ethylene glycol

Local effects  
Irritant;inhalation, skin, eye  
Ethylene glycol  
Irritant;eye  
Polyoxyethylene nonylphenyl ether

Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).  
Ethylene glycol  
pneumoconiosis  
Additive

Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough  irritation	Resin / Titanium dioxide Ethylene glycol / Additive Polyoxyethylene nonylphenyl ether
Skin contact	mechanical abrasion,irritation irritation irritation,dry	Resin Polyoxyethylene nonylphenyl ether Ethylene glycol / Additive
Eye contact	irritation irritation,redness  irritation,eye damage	Resin Titanium dioxide / Ethylene glycol Additive Polyoxyethylene nonylphenyl ether
Ingestion	physiologically inert,intestinal obstruction nausea,vomiting digestive disorders,diarrhea	Titanium dioxide  Ethylene glycol Polyoxyethylene nonylphenyl ether

Specific effects  
IARC Group 3  
Resin / Additive  
IARC Group 2B  
Titanium dioxide

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## 12. ECOLOGICAL INFORMATION

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Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

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## 14. TRANSPORT INFORMATION

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HS Code : 960810

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## 15. REGULATORY INFORMATION

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Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol

EU labeling

25%<=Xn;R22

Ethylene glycol

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive

Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

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## 16. OTHER INFORMATION

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This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Fluorescent orange [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date  
 File No. : 010424A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature:      Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Resins	Registered	Registered	Registered	10- 30
Additives	Registered	Registered	Registered	10- 30
Titanium dioxide	13463-67-7	Registered	2366755	< 10
Ethylene glycol	107-21-1	Registered	2034733	< 10
Coloring agents	Registered	Registered	Registered	< 10
Polyoxyethylene nonylphenyl	9016-45-9	Registered	Registered	< 1

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Resin>

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Polyoxyethylene nonylphenyl ether>

MAJOR HEALTH HAZARDS: eye irritation

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

**Skin contact:**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye contact:**

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:**

If swallowed, seek medical advice, and show the MSDS to the physician then.  
[Ink quantity of product : about 5.4g]

**5. FIRE-FIGHTING MEASURES**

Fire and explosion measures : Slight fire hazard.

**Extinguishing media:**

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.  
Use extinguishing agents appropriate for surrounding fire.  
Avoid inhalation of material or combustion by-products.  
Stay upwind and keep out of low areas.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.  
: In accordance with national, state and local regulations.

**7. HANDLING AND STORAGE**

Store and handle in accordance with all current regulations and standards.  
Keep separated from incompatible substances.

**Handling:**

Technical measures : Don't swallow ink.  
: Recap after use.  
: Keep out of the reach of children.  
: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

**Storage:**

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.  
: Do not leave the products in high temperature space.  
: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids,	Ethylene glycol
halogens, acids, combustible materials,	Additive

Packaging materials : Not applicable.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m <sup>3</sup> TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m <sup>3</sup> divided by % SiO <sub>2</sub> )	Titanium dioxide Additive
ACGIH	10mg/m <sup>3</sup> TWA ceiling 100mg/m <sup>3</sup> (particulate)(aerosol) 10mg/m <sup>3</sup> TWA(inhalable fraction) 3mg/m <sup>3</sup> TWA(respirable fraction) (no asbestos and <1% crystalline silica)	Titanium dioxide Ethylene glycol Additive
EC	6mg/m <sup>3</sup> 52mg/m <sup>3</sup> (20ppm) EC MAK TWA(skin), 104mg/m <sup>3</sup> (40ppm) EC MAK STEL(skin)	Titanium dioxide Ethylene glycol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Fluorescent orange.
Odor	: None odor.
pH	: 8.0
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.2 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 61%

## 10. STABILITY AND REACTIVITY

Stability : Stability.

Hazardous reactions : Will not occur.

Conditions to avoid : Avoid heat, flames, sparks and other sources of ignition.  
Avoid contact with incompatible materials.

## Materials to avoid : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive

## Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen, cyanides, aldehydes, corrosive acrolein, various organic fragments	Resin
oxides of titanium.	Titanium dioxide
crystalline silica.	Additive

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**11. TOXICOLOGICAL INFORMATION**


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## (Information of components)

## Acute toxicity

Ingestion LD50	1000mg/kg-Mouse >24000mg/kg-Rat 4700mg/kg-Rat 3160mg/kg-Rat 2950mg/kg-Mouse 550mg/kg-Rat 1310mg/kg-Rat	Resin Titanium dioxide Ethylene glycol Additive Coloring agent Polyoxyethylene nonylphenyl ether
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat	Titanium dioxide
Skin LD50	9530uL/kg-Rabbit	Ethylene glycol

## Local effects

Irritant:inhalation, skin, eye Irritant:eye	Ethylene glycol Polyoxyethylene nonylphenyl ether
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## Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus). pneumoconiosis	Ethylene glycol Additive
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## Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation	Resin / Titanium dioxide Ethylene glycol / Additive Polyoxyethylene nonylphenyl ether
Skin contact	mechanical abrasion,irritation irritation burns,corrosive irritation,dry	Resin Polyoxyethylene nonylphenyl ether Coloring agent Ethylene glycol / Additive
Eye contact	irritation irritation,redness irritation,eye damage	Resin Titanium dioxide / Ethylene glycol Additive Polyoxyethylene nonylphenyl ether

Ingestion	physiologically inert,intestinal obstruction nausea,vomiting digestive disorders,diarrhea	Titanium dioxide  Ethylene glycol / Coloring agent Polyoxyethylene nonylphenyl ether
Specific effects	IARC Group 3 IARC Group 2B	Resin / Additive Titanium dioxide

---

## 12. ECOLOGICAL INFORMATION

---

Not available.

---

## 13. DISPOSAL CONSIDERATIONS

---

Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

---

## 14. TRANSPORT INFORMATION

---

HS Code : 960810

---

## 15. REGULATORY INFORMATION

---

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol

EU labeling

25%≤Xn;R22

Ethylene glycol

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive

Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

---

## 16. OTHER INFORMATION

---

This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Fluorescent green [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date  
 File No. : 010425A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature:      Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Resins	Registered	Registered	Registered	10- 30
Additives	Registered	Registered	Registered	10- 30
Titanium dioxide	13463-67-7	Registered	2366755	< 10
Ethylene glycol	107-21-1	Registered	2034733	< 10
Coloring agents	Registered	Registered	Registered	< 10
Polyoxyethylene nonylphenyl	9016-45-9	Registered	Registered	< 1

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Resin/ Coloring agent>

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Polyoxyethylene nonylphenyl ether>

MAJOR HEALTH HAZARDS: eye irritation

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)



**Skin contact:**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye contact:**

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:**

If swallowed, seek medical advice, and show the MSDS to the physician then.  
[Ink quantity of product : about 5.4g]

**5. FIRE-FIGHTING MEASURES**

Fire and explosion measures : Slight fire hazard.

**Extinguishing media:**

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.  
Use extinguishing agents appropriate for surrounding fire.  
Avoid inhalation of material or combustion by-products.  
Stay upwind and keep out of low areas.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.  
: In accordance with national, state and local regulations.

**7. HANDLING AND STORAGE**

Store and handle in accordance with all current regulations and standards.  
Keep separated from incompatible substances.

**Handling:**

Technical measures : Don't swallow ink.  
: Recap after use.  
: Keep out of the reach of children.  
: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

**Storage:**

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.  
: Do not leave the products in high temperature space.  
: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids,	Ethylene glycol
halogens, acids, combustible materials,	Additive

Packaging materials : Not applicable.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m <sup>3</sup> TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m <sup>3</sup> divided by % SiO <sub>2</sub> ) 5mg/m <sup>3</sup> (Respirable fraction) 15mg/m <sup>3</sup> (Total dust) [Nuisance Dust]	Titanium dioxide Additive  Coloring agent
ACGIH	10mg/m <sup>3</sup> TWA ceiling 100mg/m <sup>3</sup> (particulate)(aerosol) 10mg/m <sup>3</sup> TWA(inhalable fraction) 3mg/m <sup>3</sup> TWA(respirable fraction) (no asbestos and <1% crystalline silica) 10mg/m <sup>3</sup> TWA	Titanium dioxide Ethylene glycol Additive  Coloring agent
EC	6mg/m <sup>3</sup> 52mg/m <sup>3</sup> (20ppm) EC MAK TWA(skin), 104mg/m <sup>3</sup> (40ppm) EC MAK STEL(skin)	Titanium dioxide Ethylene glycol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Fluorescent green.
Odor	: None odor.
pH	: 8.0
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.2 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 63%

## 10. STABILITY AND REACTIVITY

Stability	: Stability.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

## Materials to avoid : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive

## Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen, cyanides, aldehydes, corrosive acrolein, various organic fragments	Resin
miscellaneous decomposition products.	
oxides of titanium.	Titanium dioxide
oxides of nitrogen.	Coloring agent
crystalline silica.	Additive

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**11.TOXICOLOGICAL INFORMATION**


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## (Information of components)

## Acute toxicity

Ingestion LD50	1000mg/kg-Mouse >24000mg/kg-Rat 4700mg/kg-Rat 3160mg/kg-Rat 550mg/kg-Rat >5000mg/kg-Rat 1310mg/kg-Rat	Resin Titanium dioxide Ethylene glycol Additive Coloring agent  Polyoxyethylene nonylphenyl ether
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat	Titanium dioxide
Skin LD50	9530uL/kg-Rabbit	Ethylene glycol

Local effects	Irritant:inhalation, skin, eye Irritant:eye	Ethylene glycol Polyoxyethylene nonylphenyl ether
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## Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).	Ethylene glycol
pneumoconiosis	Additive

## Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough  headache,nausea,irritation,cough irritation	Titanium dioxide Ethylene glycol / Additive Resin Coloring agent Polyoxyethylene nonylphenyl ether
Skin contact	mechanical abrasion,irritation irritation irritation,dry	Resin Polyoxyethylene nonylphenyl ether Ethylene glycol / Additive
Eye contact	irritation irritation,redness  irritation,eye damage	Resin / Coloring agent Titanium dioxide / Ethylene glycol Additive Polyoxyethylene nonylphenyl ether

Ingestion	physiologically inert,intestinal obstruction digestive discomfort nausea,vomiting gastric disturbances digestive disorders,diarrhea	Titanium dioxide Resin Ethylene glycol Coloring agent Polyoxyethylene nonylphenyl ether
Specific effects	IARC Group 3 IARC Group 2B	Resin / Additive Titanium dioxide

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## 12. ECOLOGICAL INFORMATION

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Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste from residues : Disposal in accordance with all current regulations and standards.

Contaminated packaging : Not applicable.

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## 14. TRANSPORT INFORMATION

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HS Code : 960810

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## 15. REGULATORY INFORMATION

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Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol

EU labeling

25%<=Xn;R22

Ethylene glycol

CANADA Hazardous Products Act - Ingredient Disclosure List

1%over

Ethylene glycol / Additive

Hazard and safety information

Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

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## 16. OTHER INFORMATION

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This sheet completes the technical sheet of use but it doesn't replace it.

The information contained in this sheet are based knowledge of the products at the data : (October 25, 2011). They are given quite sincerely.

Moreover the attention of the users is drawn on the risks possibly taken, when a product is used for other utilization than these which it is intended.

# Safety data sheet for chemical products

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PWE-5M Fluorescent pink [ Chalk marker ]

Manufacture's name : MITSUBISHI PENCIL CO.,LTD.  
 Address : 5-23-37, HIGASHIOHI, SHINAGAWA, TOKYO, JAPAN  
 Telephone number : 03-3458-6281      Telefax number : 03-3450-0363  
 Telex number : 2422337 MBPENC J.

Creation Date : October 25, 2011  
 Revision Date  
 File No. : 010426A      Rev.2.5.01.01

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The chemical product is a substance or a preparation : Preparation

Chemical nature:                      Component parts : Ink

Chemical or generic name	CAS No.	TSCA	EINECSNo.	Concentration range (wt%)
Water	7732-18-5	Registered	2317912	50- 80
Resins	Registered	Registered	Registered	10- 30
Additives	Registered	Registered	Registered	10- 30
Titanium dioxide	13463-67-7	Registered	2366755	< 10
Ethylene glycol	107-21-1	Registered	2034733	< 10
Polyoxyethylene nonylphenyl	9016-45-9	Registered	Registered	< 1
Coloring agent	Registered	Registered	Registered	< 1

Other parts : Other parts are excluded from 'chemical substances'.

## 3. HAZARDS IDENTIFICATION

Most important hazards : Not available.

Specific hazards : Information of components.

<Resin>

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

<Ethylene glycol>

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, nerve damage, kidney damage

<Polyoxyethylene nonylphenyl ether>

MAJOR HEALTH HAZARDS: eye irritation

## 4. FIRST-AID MEASURES

Inhalation:

Not applicable.

(Due to its low vapor pressure. Inhalation is unlikely at room temperature.)

**Skin contact:**

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eye contact:**

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion:**

If swallowed, seek medical advice, and show the MSDS to the physician then.  
[Ink quantity of product : about 5.4g]

**5. FIRE-FIGHTING MEASURES**

Fire and explosion measures : Slight fire hazard.

**Extinguishing media:**

Suitable : regular dry chemical, carbon dioxide, water, regular foam.

Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Products is no flammable.

Use extinguishing agents appropriate for surrounding fire.

Avoid inhalation of material or combustion by-products.

Stay upwind and keep out of low areas.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Not available.

Environmental precautions : Do not wash away into shower or water way.

Methods for cleaning up : Wipe off by dry cloth and wash with water.

: In accordance with national, state and local regulations.

**7. HANDLING AND STORAGE**

Store and handle in accordance with all current regulations and standards.

Keep separated from incompatible substances.

**Handling:**

Technical measures : Don't swallow ink.

: Recap after use.

: Keep out of the reach of children.

: Avoid contact with skin and eyes.

Precautions : Not available.

Safe handling advice : Not available.

**Storage:**

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.

Storage condition : Avoid direct sunlight.

: Do not leave the products in high temperature space.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials Resin / Coloring agent

Polyoxyethylene nonylphenyl ether

metals Titanium dioxide

oxidizing materials, bases, acids, Ethylene glycol

halogens, acids, combustible materials, Additive

Packaging materials : Not applicable.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required.

Control parameters (Information of components.)

OSHA	15mg/m3 TWA (Total dust) 20mppcf TWA (<1% crystalline silica) (80mg/m3 divided by % SiO2)	Titanium dioxide Additive
ACGIH	10mg/m3 TWA ceiling 100mg/m3 (particulate)(aerosol) 10mg/m3 TWA(inhalable fraction) 3mg/m3 TWA(respirable fraction) (no asbestos and <1% crystalline silica)	Titanium dioxide Ethylene glycol Additive
EC	10mg/m3 TWA 6mg/m3 52mg/m3(20ppm) EC MAK TWA(skin), 104mg/m3(40ppm) EC MAK STEL(skin)	Coloring agent Titanium dioxide Ethylene glycol

Personal protective equipment : Not required.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

[ ] : Information of components.

Physical state	: Liquid.
Color	: Fluorescent pink.
Odor	: None odor.
pH	: 8.0
Boiling point	: Not available. [Water/ 100 C]
Melting point	: <-10 C
Flash point	: Not applicable. [Ethylene glycol/ 111 C]
Autoignition temperature	: Not applicable. [Ethylene glycol/ 398 C]
Explosion limits	: Not applicable. [ Lower flammable limit / 3.2% , Upper flammable limit / 15.3% <Ethylene glycol> ]
Density	: about 1.2 / 25 C
Vapor density (air=1)	: Not available. [Ethylene glycol/ 2.1]
Solubility in water	: Soluble.
Evaporation rate	: Not available.
Volatile	: 62%

## 10. STABILITY AND REACTIVITY

Stability	: Stability.
Hazardous reactions	: Will not occur.
Conditions to avoid	: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

## Materials to avoid : (Information of components.)

oxidizing materials	Resin / Coloring agent Polyoxyethylene nonylphenyl ether
metals	Titanium dioxide
oxidizing materials, bases, acids, reducing agents, metals	Ethylene glycol
halogens, acids, combustible materials, metals, metal salts, oxidizing materials	Additive

## Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen, cyanides, aldehydes, corrosive acrolein, various organic fragments	Resin
oxides of titanium.	Titanium dioxide
miscellaneous decomposition products.	Coloring agent
crystalline silica.	Additive

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**11. TOXICOLOGICAL INFORMATION**


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## (Information of components)

## Acute toxicity

Ingestion LD50	1000mg/kg-Mouse >24000mg/kg-Rat 4700mg/kg-Rat 3160mg/kg-Rat ≥ 5000mg/kg-Rat 1310mg/kg-Rat	Resin Titanium dioxide Ethylene glycol Additive Coloring agent Polyoxyethylene nonylphenyl ether
Inhalation LC50	6820mg/m <sup>3</sup> -4H-Rat	Titanium dioxide
Skin LD50	9530uL/kg-Rabbit	Ethylene glycol

## Local effects

Irritant:inhalation, skin, eye	Ethylene glycol
Irritant:eye	Polyoxyethylene nonylphenyl ether

## Chronic toxicity and long term toxicity

The substance may have effects on the central nervous system, resulting in abnormal eye movements (nystagmus).	Ethylene glycol
pneumoconiosis	Additive

## Signs and Symptoms of overexposure and aggravated by exposure

Inhalation	irritation,cough  irritation	Resin / Titanium dioxide Ethylene glycol / Additive Coloring agent Polyoxyethylene nonylphenyl ether
Skin contact	mechanical abrasion,irritation irritation irritation,dry	Resin Polyoxyethylene nonylphenyl ether Ethylene glycol / Additive
Eye contact	irritation irritation,redness  irritation,eye damage	Resin Titanium dioxide / Ethylene glycol Additive Polyoxyethylene nonylphenyl ether
Ingestion	physiologically inert,intestinal obstruction nausea,vomiting digestive disorders,diarrhea	Titanium dioxide  Ethylene glycol Polyoxyethylene nonylphenyl ether



Specific effects	IARC Group 3 IARC Group 2B	Resin / Additive Titanium dioxide
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## 12. ECOLOGICAL INFORMATION

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Not available.

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## 13. DISPOSAL CONSIDERATIONS

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Waste from residues : Disposal in accordance with all current regulations and standards.  
Contaminated packaging : Not applicable.

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## 14. TRANSPORT INFORMATION

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HS Code : 960810

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## 15. REGULATORY INFORMATION

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Regulations (Information of components)  
Hazardous chemicals (OSHA HCS) : Titanium dioxide / Ethylene glycol

EU labeling  
25%<=Xn;R22 Ethylene glycol

CANADA Hazardous Products Act - Ingredient Disclosure List  
1%over Ethylene glycol / Additive

Hazard and safety information  
Products are manufactured in accordance with ISO 8124-3 " Safety of Toys - Part 3"

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## 16. OTHER INFORMATION

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This sheet completes the technical sheet of use but it doesn't replace it.  
The information contained in this sheet are based knowledge of the products  
at the data : (October 25, 2011). They are given quite sincerely.  
Moreover the attention of the users is drawn on the risks possibly taken,  
when a product is used for other utilization than these which it is intended.