

Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PX-20 White [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030184A Rev. 2.5.23.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30

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

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.
Specific hazards : Information of components.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)
Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.5g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.
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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : White.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 43-46%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin

Hazardous decomposition products : (Information of components.)

oxides of carbon, water common decomposition products

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl-
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%≤Xn;R20/21<20%≤Xn;R20/21-38, R10 : Xylene

25%≤Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Yellow [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030185A Rev. 2.5.23.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agent	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.5g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Yellow.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 44-47%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl-
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%≤Xn;R20/21<20%≤Xn;R20/21-38, R10 : Xylene

25%≤Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Red [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030186A Rev. 2.5.23.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)
Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.2g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable : regular dry chemical, carbon dioxide, water, regular foam
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : Move container from fire area if it can be done without risk.
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 : Take/Soak up with absorbent.
: 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 : Use only in well-ventilated areas.
: Don't breathe the vapor.
Safe handling advice : Not available.

Storage:

Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
: Keep away from heat sources.
: Recommended temperature: 0-30 C.
Incompatible products : (Information of components.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Red.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 46-49%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl-
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%≤Xn;R20/21<20%≤Xn;R20/21-38, R10 : Xylene

25%≤Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

16. OTHER INFORMATION

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Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PX-20 Blue [PAINT 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.

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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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.2g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

strong oxidizers

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Blue.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubulity in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 46-49%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen, sulfur, copper.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat 525mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl- Coloring agent
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit >2000mg/kg	Titanium dioxide Xylene Benzene, ethyl- Coloring agent

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-
Specific effects	IARC Group 3 IARC Group 2B	Xylene Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%≤Xn;R20/21<20%≤Xn;R20/21-38, R10 : Xylene

25%≤Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Green [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030188A Rev. 2.5.24.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.2g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Green.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 46-49%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat >5000mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl- Coloring agent
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

The liquid defats the skin. The substance may have Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Pink [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030189A Rev. 2.5.22.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agent	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.5g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

strong oxidizers

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m3) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m3 TWA 100ppm TWA, 150ppm STEL 100ppm TWA, 125ppm STEL	Titanium dioxide Xylene Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL 100ppm TWA, 200ppm STEL	Xylene Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Pink.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 42-45%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl-
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Orange [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030190A Rev. 2.5.22.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.5g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[]: Information of components.

Physical state and form : Low viscous liquid.
 Colour : Orange.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 42-45%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl-
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Light blue [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030191A Rev. 2.5.23.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.4g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

strong oxidizers

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Light blue.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 45-48%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

14. TRANSPORT INFORMATION

HS Code : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Light green [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030192A Rev. 2.5.23.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.5g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[]: Information of components.

Physical state and form : Low viscous liquid.
 Colour : Light green.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 44-47%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat >5000mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl- Coloring agent
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit	Titanium dioxide Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-
Specific effects	IARC Group 3 IARC Group 2B	Xylene Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Violet [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030193A Rev .2.5.22.05

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.3g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

strong oxidizers

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Violet.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 45-48%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat 525mg/kg-Rat	Titanium dioxide Xylene Benzene, ethyl- Coloring agent
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit >2000mg/kg	Titanium dioxide Xylene Benzene, ethyl- Coloring agent

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-
Specific effects	IARC Group 3 IARC Group 2B	Xylene Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Brown [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030194A Rev. 2.5.23.06

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)
Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.3g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

metals

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

strong oxidizers

Titanium dioxide

Xylene

Benzene, ethyl-

Resin

Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[]: Information of components.

Physical state and form : Low viscous liquid.
 Colour : Brown.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 44-47%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat >2000mg/kg	Titanium dioxide Xylene Benzene, ethyl- Coloring agent
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit >2000mg/kg	Titanium dioxide Xylene Benzene, ethyl- Coloring agent

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3 Xylene
 IARC Group 2B Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Grey [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030195A Rev. 2.5.23.06

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%)
Titanium dioxide	13463-67-7	Registered	2366755	30- 50
Xylenes	1330-20-7	Registered	2155357	30- 50
(Benzene, ethyl-)	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.3g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

- | | |
|---------------|--|
| Suitable | : regular dry chemical, carbon dioxide, water, regular foam |
| Large fires | : Use regular foam or flood with fine water spray. |
| Fire fighting | : Move container from fire area if it can be done without risk.
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 | : Take/Soak up with absorbent.
: 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 | : Use only in well-ventilated areas.
: Don't breathe the vapor. |
| Safe handling advice | : Not available. |

Storage:

- | | |
|--|--|
| Technical measures | : Keep away from oxidizing materials, ignition sources and high temperature. |
| Storage condition | : Avoid direct sunlight.
: Keep away from heat sources.
: Recommended temperature: 0-30 C. |
| Incompatible products | : (Information of components.) |
| metals | Titanium dioxide |
| oxidizing materials, combustible materials, acids, amines, bases | Xylene |
| acids, bases, oxidizing materials, combustible materials | Benzene, ethyl- |
| oxidizing materials | Resin |
| strong oxidizers | Coloring agent |
| Packaging materials | : Not applicable. |

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	10mg/m ³ TWA	Titanium dioxide
	100ppm TWA, 150ppm STEL	Xylene
	100ppm TWA, 125ppm STEL	Benzene, ethyl-
EC	50ppm TWA, 100ppm STEL	Xylene
	100ppm TWA, 200ppm STEL	Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.
 Colour : Grey.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.3 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 45-48%

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.)

metals	Titanium dioxide
oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	>24000mg/kg-Rat 2119mg/kg-Mouse 3500mg/kg-Rat >2000mg/kg	Titanium dioxide Xylene Benzene, ethyl- Coloring agent
Inhalation LC50	>6820mg/m ³ -4H-Rat 5000ppm-4H-Rat	Titanium dioxide Xylene
Skin LD50	>10000mg/m ³ -Rabbit >1700mg/kg-Rabbit 17800uL/kg-Rabbit >2000mg/kg	Titanium dioxide Xylene Benzene, ethyl- Coloring agent

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,cough irritation,nausea irritation,difficulty breathing	Titanium dioxide / Resin Xylene Benzene, ethyl-
Skin contact	irritation irritation,blisters irritation,absorption	Titanium dioxide / Resin / Coloring agent Xylene Benzene, ethyl-
Eye contact	irritation irritation,burn irritation,tearing irritation,redness	Titanium dioxide / Coloring agent Xylene Benzene, ethyl- Resin
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-
Specific effects	IARC Group 3 IARC Group 2B	Xylene Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Titanium dioxide / Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Black [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030196A Rev. 2.5.03.06

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%)
Xylenes (Benzene, ethyl-)	1330-20-7	Registered	2155357	50- 80
	100-41-4	Registered	2028494	
Resins	Registered	Registered	Polymer	10- 30
1-Propanol, 2-methyl-	78-83-1	Registered	2011480	< 10
Coloring agents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

<1-Propanol, 2-methyl->

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

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

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 7.8g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials, combustible materials, acids, amines, bases

acids, bases, oxidizing materials, combustible materials

oxidizing materials

metals, oxidizing materials, combustible materials, metal salts

strong oxidizers

Xylene

Benzene, ethyl-

Resin

1-Propanol, 2-methyl-

Coloring agent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA 100ppm(300mg/m ³) TWA	Xylene / Benzene, ethyl- 1-Propanol, 2-methyl-
ACGIH	100ppm TWA, 150ppm STEL 100ppm TWA, 125ppm STEL 50ppm TWA	Xylene Benzene, ethyl- 1-Propanol, 2-methyl-
EC	50ppm TWA, 100ppm STEL 100ppm TWA, 200ppm STEL	Xylene Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form	: Low viscous liquid.
Colour	: Black.
Odour	: Aromatic odour.
pH	: Not applicable.
Boiling point	: Not available. [1-Propanol, 2-methyl-/ 108 C]
Melting point	: Not available.
Flash point	: Not available. [Benzene, ethyl-/ 15 C(CC)]
Autoignition temperature	: Not available. [1-Propanol, 2-methyl-/ 415 C]
Explosion limits	: Not applicable. [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
Density	: about 0.9 / 25 C
Vapour density (air=1)	: Not available. [Benzene, ethyl-/ 3.7]
Solubility in water	: Not available. [Benzene, ethyl-/ 0.015%]
Evaporation rate	: Not available. [Xylene/ 0.6]
Volatile	: 70-73%

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, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
metals, oxidizing materials, combustible materials, metal salts	1-Propanol, 2-methyl-
strong oxidizers	Coloring agent

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
oxides of nitrogen.	Coloring agent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	2119mg/kg-Mouse 3500mg/kg-Rat 2460mg/kg-Rat >2000mg/kg	Xylene Benzene, ethyl- 1-Propanol, 2-methyl- Coloring agent
Inhalation LC50	5000ppm-4H-Rat	Xylene
Skin LD50	>1700mg/kg-Rabbit 17800uL/kg-Rabbit 3400mg/kg-Rabbit >2000mg/kg	Xylene Benzene, ethyl- 1-Propanol, 2-methyl- Coloring agent

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl- /
1-Propanol, 2-methyl- / Resin

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,nausea irritation,cough irritation,difficulty breathing	Xylene / 1-Propanol, 2-methyl- / Resin Resin Benzene, ethyl-
Skin contact	irritation,blisters irritation,absorption irritation irritation,redness	Xylene Benzene, ethyl- Resin / Coloring agent 1-Propanol, 2-methyl-
Eye contact	irritation,burn irritation,tearing irritation,redness irritation	Xylene Benzene, ethyl- Resin / 1-Propanol, 2-methyl- Coloring agent
Ingestion	irritation,nausea nausea,vomiting abdominal pain,headache	Xylene Benzene, ethyl- 1-Propanol, 2-methyl-

Specific effects IARC Group 3 Xylene
IARC Group 2B Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Xylene / Benzene, ethyl- / 1-Propanol, 2-methyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene
25%<=Xn;R20, F;R11 : Benzene, ethyl-
Xi;R37/38-41, R67, R10 : 1-Propanol, 2-methyl-

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-
1%over : 1-Propanol, 2-methyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Gold [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030197A Rev. 2.5.04.06

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%)
Xylenes (Benzene, ethyl-)	1330-20-7	Registered	2155357	30- 50
	100-41-4	Registered	2028494	
Bronze powder	7440-66-6	Registered	2311753	10- 30
	7440-50-8	Registered	2311596	
Resin	Registered	Registered	Polymer	10- 30

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

3. HAZARDS IDENTIFICATION

Most important hazards : Not available.
Specific hazards : Information of components.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

<1-Propanol, 2-methyl->

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

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

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)

Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.1g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

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

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

Fire fighting : Move container from fire area if it can be done without risk.

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 : Take/Soak up with absorbent.

: 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 : Use only in well-ventilated areas.

: Don't breathe the vapor.

Safe handling advice : Not available.

Storage:

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

Storage condition : Avoid direct sunlight.

: Keep away from heat sources.

: Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials, combustible materials, acids, amines,

acids, bases, oxidizing materials, combustible materials

strong acids, oxidizing agents

oxidizing materials

Xylene

Benzene, ethyl-

Bronze powder

Resin

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m ³) TWA	Xylene / Benzene, ethyl-
ACGIH	100ppm TWA, 150ppm STEL 100ppm TWA, 125ppm STEL 10mg/m ³ (Nuisance particulate)	Xylene Benzene, ethyl- Resin
EC	50ppm TWA, 100ppm STEL 100ppm TWA, 200ppm STEL	Xylene Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[]: Information of components.

Physical state and form : Low viscous liquid.
 Colour : Gold.
 Odour : Aromatic odour.
 pH : Not applicable.
 Boiling point : Not available. [Benzene, ethyl-/ 136 C]
 Melting point : Not available.
 Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]
 Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]
 Explosion limits : Not applicable.
 [Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]
 Density : about 1.2 / 25 C
 Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]
 Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]
 Evaporation rate : Not available. [Xylene/ 0.6]
 Volatile : 47-50%

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, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
strong acids, oxidizing agents	Bronze powder
oxidizing materials	Resin

Hazardous decomposition products : (Information of components.)

oxides of carbon, water	common decomposition products
Toxic fumes of zinc oxide.	Bronze powder
miscellaneous decomposition products.	

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	2119mg/kg-Mouse 3500mg/kg-Rat	Xylene Benzene, ethyl-
Inhalation LC50	5000ppm-4H-Rat	Xylene
Skin LD50	>1700mg/kg-Rabbit 17800uL/kg-Rabbit	Xylene Benzene, ethyl-

Local effects Irritant;inhalation, skin, eye Xylene / Benzene, ethyl-

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development. Xylene

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,nausea irritation,difficulty breathing	Xylene Benzene, ethyl-
Skin contact	irritation,blisters irritation,absorption	Xylene Benzene, ethyl-
Eye contact	irritation,burn irritation,tearing	Xylene Benzene, ethyl-
Ingestion	irritation,nausea nausea,vomiting	Xylene Benzene, ethyl-

Specific effects IARC Group 3
IARC Group 2B Xylene
Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Xylene / Benzene, ethyl-

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene

25%<=Xn;R20, F;R11 : Benzene, ethyl-

R10 : Bronze powder

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0.1%over : Benzene, ethyl-

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). 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: PX-20 Silver [PAINT 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 : May 14, 2001
Revision Date : Jan. 5, 2007
File No. : 030198A Rev. 2.5.02.06

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%)
Xylenes (Benzene, ethyl-)	1330-20-7	Registered	2155357	50- 80
	100-41-4	Registered	2028494	
Resin	Registered	Registered	Polymer	10- 30
Aluminum paste	7429-90-5	Registered	2310723	10- 30
Petroleum solvents	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.

<Xylene><Benzene, ethyl->

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

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

Electrostatic charges may be generated by flow, agitation, etc.

<Aluminum paste>

MAJOR HEALTH HAZARDS: Causes respiratory tract irritation. May be irritating to skin and eyes. May cause convulsions.

PHYSICAL HAZARDS: Extremely flammable. May catch fire if exposed to air. May form flammable or explosive dust-air mixtures. May react with water.

4. FIRST-AID MEASURES

Inhalation:

Remove from exposure area to fresh air immediately. Give artificial respiration if not breathing. Treat symptomatically and supportively. Get medical attention immediately.

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:

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. (at least 15-20 minutes)
Get medical attention immediately.

Ingestion:

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately, and show the MSDS to the physician then.

[Ink quantity of product : about 8.0g]

5. FIRE-FIGHTING MEASURES

Extinguishing media:

- Suitable** : regular dry chemical, carbon dioxide, water, regular foam
Large fires : Use regular foam or flood with fine water spray.
Fire fighting : Move container from fire area if it can be done without risk.
 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 : Take/Soak up with absorbent.
 : 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 : Use only in well-ventilated areas.
 : Don't breathe the vapor.
Safe handling advice : Not available.
- Storage:**
- Technical measures** : Keep away from oxidizing materials, ignition sources and high temperature.
Storage condition : Avoid direct sunlight.
 : Keep away from heat sources.
 : Recommended temperature: 0-30 C.

Incompatible products : (Information of components.)

oxidizing materials, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
acids, combustible materials, oxidizing materials, metals, metal salts, bases, metal oxides, halogens, reducing agents, halo carbons, peroxides, metal carbides	Aluminum paste
acids, bases, oxidizing materials	Petroleum solvent

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Local exhaust ventilation system are not required, but recommended.

Control parameters (Information of components.)

OSHA	100ppm(435mg/m3) TWA 15mg/m3(total dust), 5mg/m3(respirable fraction), 5mg/m3 (pyro powders) 5mg/m3	Xylene / Benzene, ethyl- Aluminum paste Petroleum solvent
ACGIH	100ppm TWA, 150ppm STEL 100ppm TWA, 125ppm STEL 10mg/m3(Nuisance particulate) 10mg/m3 TWA(metal particulate), 5mg/m3 TWA(pyro powders) 5mg/m3 TWA, 10mg/m3 STEL	Xylene Benzene, ethyl- Resin Aluminum paste Petroleum solvent
EC	50ppm TWA, 100ppm STEL 100ppm TWA, 200ppm STEL	Xylene Benzene, ethyl-

Personal protective equipment : General persons are not required, but alcohol allergy persons recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

[] : Information of components.

Physical state and form : Low viscous liquid.

Colour : Silver.

Odour : Aromatic odour.

pH : Not applicable.

Boiling point : Not available. [Benzene, ethyl-/ 136 C]

Melting point : Not available.

Flash point : Not available. [Benzene, ethyl-/ 15 C(CC)]

Autoignition temperature : Not available. [Benzene, ethyl-/ 432 C]

Explosion limits : Not applicable.
[Lower flammable limit / 0.8% , Upper flammable limit / 6.7% <Benzene, ethyl->]

Density : about 1.0 / 25 C

Vapour density (air=1) : Not available. [Benzene, ethyl-/ 3.7]

Solubility in water : Not available. [Benzene, ethyl-/ 0.015%]

Evaporation rate : Not available. [Xylene/ 0.6]

Volatile : 66-69%

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, combustible materials, acids, amines, bases	Xylene
acids, bases, oxidizing materials, combustible materials	Benzene, ethyl-
oxidizing materials	Resin
acids, combustible materials, oxidizing materials, metals,	Aluminum paste
metal salts, bases, metal oxides, halogens, reducing agents,	
halo carbons, peroxides, metal carbides	
acids, bases, oxidizing materials	Petroleum solvent
Hazardous decomposition products	: (Information of components.)
oxides of carbon, water	common decomposition products
hydrocarbon gases, oxides of aluminum.	Aluminum paste
aldehyde.	Petroleum solvent

11. TOXICOLOGICAL INFORMATION

(Information of components)

Acute toxicity

Ingestion LD50	2119mg/kg-Mouse 3500mg/kg-Rat >5000mg/kg-Rat ≥5000mg/kg-Rat	Xylene Benzene, ethyl- Aluminum paste Petroleum solvent
Inhalation LC50	5000ppm-4H-Rat	Xylene
Skin LD50	>1700mg/kg-Rabbit 17800uL/kg-Rabbit	Xylene Benzene, ethyl-

Local effects	Irritant;inhalation, skin, eye	Xylene / Benzene, ethyl- / Petroleum solvent
	Irritant;inhalation	Aluminum paste

Chronic toxicity and long term toxicity

The liquid defats the skin. The substance may have effects on the central nervous system. Exposure to the substance may enhance hearing damage caused by exposure to noise. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Lungs may be affected by repeated or prolonged exposure to dust particles. The substance may have effects on the nervous system, resulting in impaired functions.

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	irritation,nausea irritation,difficulty breathing irritation,cough	Xylene / Petroleum solvent Benzene, ethyl- Aluminum paste
Skin contact	irritation,blisters irritation,absorption irritation,itching irritation,skin disorder	Xylene Benzene, ethyl- Aluminum paste Petroleum solvent

Eye contact	irritation,burn irritation,tearing irritation,eye damage irritation	Xylene Benzene, ethyl- Aluminum paste Petroleum solvent
Ingestion	irritation,nausea nausea,vomiting irritation,digestive disorders	Xylene / Petroleum solvent Benzene, ethyl- Aluminum paste
Specific effects	IARC Group 3 IARC Group 2B	Xylene Benzene, ethyl-

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 : 960820

15. REGULATORY INFORMATION

Regulations (Information of components)

Hazardous chemicals (OSHA HCS) : Xylene / Benzene, ethyl- / Aluminum paste / Petroleum solvent

EU labeling

12.5%<=Xn;R20/21<20%<=Xn;R20/21-38, R10 : Xylene
25%<=Xn;R20, F;R11 : Benzene, ethyl-
F;R15-17 : Aluminum paste
10%<=Xn;R65 : Petroleum solvent

CANADA Hazardous Products Act - Ingredient Disclosure List

0.1%over : Benzene, ethyl-
1%over : Aluminum paste / Petroleum solvent

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3
Products are manufactured in accordance with ELV directive of EU.

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 : (January 5, 2007). They are given quite sincerely.
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