Safety data sheet for chemical products

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PC-3M Blue / PC-5M Blue
PC-8K Blue / PC-17K Blue
(uni POSCA POSTER COLOUR MARKERS)

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>	<Chemical or generic name>	<CAS No.>	<Concentration range (wt%)>
Ink	Water	7732-18-5	57-60
	Titanium dioxide	13463-67-7	16-19
	Resins	Registered	10-13
	Ethyl alcohol	64-17-5	1- 4
	2-Propanol	67-63-0	1- 4
	Pigment Blue	Registered	1- 4
	Phthalocyanine Blue	147-148	1- 4
	Ethylene glycol	107-21-1	1- 4
	Silica (amorphous)	Registered	1- 4

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

3. HAZARDS IDENTIFICATION

Most important hazards : Not available
Specific hazards : Not available

4. FIRST-AID MEASURES

Inhalation:
Not applicable. • (Due to its low vapor pressure. Inhalation is unlikery at room temperature.)

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

Eye contact:
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:
If swallowed, seek medical adivice, and show the MSDS to the physician then.
[Ink quanity of product:
PC-3M; about 4.0g, PC-5M; about 8.2g, PC-8K; about 20.4g, PC-17K; about 40.8g]

5. FIRE-FIGHTING MEASURES

Fire and explosion measures : Slight fire hazard.

Exitinguishing media:
Suitable : regular dry chemical, carbon dioxide, water, regular foam.
Large fires : Use regular foam or flood with fine water spray.

Fire fighting : The Product is no flammable.
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 : Wipe off by dry cloth and wash with water.
: In accordance with national, state and local regulations.

7. HANDLING AND STORAGE

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

Handling:
Technical measures : Don't swallow ink.
: Recap after use.
: Keep out of the reach of children.
: Avoid contact with skin and eyes.
Precautions : Not available
Safe handling advice : Not available

Storage:
Technical measures : Keep away from oxidizing materials, ignition sources and high temperature.
Stroage condition : Avoid direct sunlight.
: Do not leave the products in high temperature space
: Recommended temperature• 0-30 C.

Incompatible products : (Information of components.)

metals, Aluminum, calcium, lithium, Magnesium, potassium, sodium, zinc <Titanium dioxide>

oxidizing materials;strong oxidizers <Resins, Phthalocyanine Blue>

strong oxidizers; phosphorus(V) sulfide; sodium hydroxide;chromium trioxide; dimethyl terephthalate + titanium butoxide; potassium permanganate; silvered copper wire; sodium peroxide; perchloric acid; strong bases; chlorosulfonic acid; oleum <Ethylene glycol>

acetic anhydride and sodium hydrogen sulfate, aluminum sesquibromide ethylate, ammonium hydroxide and silver(•) oxide, barium perchlorate, bromine pentafluoride, calcium hypochlorite, dioxygen difluoride, fluorine nitrate, hydrogen peroxide <Ethyl alcohol>

aluminum, barium perchlorate, hydrogen peroxide, strong oxidizers, phosgene, sodium dichromate + sulfuric acid, chromium trioxide, dioxygenyl tetrafluoroborate, hydrogen + palladium(particles), nitroform(trinitrimethane), potassium tert-butoxide, ketones <2-Propanol>

acids, bases, Strong acid, strong alkalis <Silica (amorphous)>

Packaging materials : Not applicable.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering measures : Not required

Control parameters• •Information of components.••

OSHA : 15mg/m3(total dust) <Titanium dioxide>
: 50ppm(125mg/m3)ceiling <Ethylene glycol>
: 1000 ppm (1900 mg/m3) TWA <Ethyl alcohol>
: 400ppm (980mg/m3) TWA, 500ppm (1230mg/m3) STEL <2-Propanol>
: 5mg/m3(respirable fraction), 15• /m3(total dust) <Phthalocyanine Blue, Silica (amorphous)>

ACGIH : 10mg/m3 <Titanium dioxide>
: 100mg/m3 ceiling (particulate) <Ethylene glycol>
: 1000 ppm TWA <Ethyl alcohol>
: 400pm TWA, 500ppm STEL <2-Propanol>
: 10• /m3(total dust) <Phthalocyanine Blue, Silica (amorphous)>

DFG : 6mg/m3(fine dust) <Titanium dioxide>
: 26mg/m3 •10ml/m3•DFG MAK 1 times/shift <Ethylene glycol>
: 960 mg/m3 (500 ml/m3) MAK <Ethyl alcohol>
: 500mg/m3 (200ml/m3) MAK <2-Propanol>

UK : 4mg/m3(respirable dust), 10• /m3(total inhalable dust) <Titanium dioxide>
: 10mg/m3 TWA(particulate)• 60mg/m3 TWA(vapour)• • 125mg/m3 STEL(vapour) <Ethylene glycol>
: 1000 ppm (1920 mg/m3) TWA <Ethyl alcohol>
: 400ppm (999mg/m3) TWA, 500ppm (1250mg/m3) STEL <2-Propanol>

EC : 20ppm, 52mg/m3(8 hours), 40ppm, 104mg/m3(short-term) <Ethylene glycol>

JAIH : 2mg/m3(respirable fraction), 8• /m3(total dust) <Pigment Blue>

Personal protective equipment : Not required

9. PHYSICAL AND CHEMICAL PROPERTIES

[• • • } • • Information of components.

Physical state and form	:	Low viscous liquid.
Colour	:	Blue.
Odour	:	Faint odour.
pH	:	8.4±1.0
Boiling point	:	Not available. [Ethyl alcohol / 78 C]
Melting point	:	< -10 C
Flashpoint	:	Not applicable. [2-Propanol / 11.7 C]
Autoignition temperature	:	Not applicable. [Ethyl alcohol / 392 C]
Explosion limits (vol %)	:	Not applicable.
		[Lower flammable limit / 2.0 , Upper flammable limit / 8.0 <2-Propanol>]
Vapour density (air=1)	:	Not available. [2-Propanol / 2.07]
Density	:	1.20±0.05
Solubility in water	:	Soluble.
Evaporation rate (Butyl acetate =1)	:	Not available. [2-Propanol / 2.88]
Volatile (%)	:	65-68%

10. STABILITY AND REACTIVITY

Stability	:	Stability.
Hazardous reactions	:	Will not occur.
Conditions to avoid	:	May burn dose not ignite ready. Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials
Materials to avoid	:	(Information of components.)

metals, Aluminum, calcium, lithium, Magnesium, potassium, sodium, zinc <Titanium dioxide>

oxidizing materials;strong oxidizers <Resins, Phthalocyanine Blue>

strong oxidizers; phosphorus(V) sulfide; sodium hydroxide;chromium trioxide; dimethyl terephthalate + titanium butoxide; potassium permanganate; silvered copper wire; sodium peroxide; perchloric acid; strong bases; chlorosulfonic acid; oleum <Ethylene glycol>

acetic anhydride and sodium hydrogen sulfate, aluminum sesquibromide ethylate, ammonium hydroxide and silver(•) oxide, barium perchlorate, bromine pentafluoride, calcium hypochlorite, dioxygen difluoride, fluorine nitrate, hydrogen peroxide <Ethyl alcohol>

aluminum, barium perchlorate, hydrogen peroxide, strong oxidizers, phosgene, sodium dichromate + sulfuric acid, chromium trioxide, dioxygenyl tetrafluoroborate, hydrogen + palladium(particles), nitroform(trinitrimethane), potassium tert-butoxide, ketones <2-Propanol>

acids, bases, Strong acid, strong alkalis <Silica (amorphous)>

Hazardous decomposition products : (Information of components.)

oxides of carbon, water. < common decomposition products.>
Hazardous fumes of titanium oxide. <Titanium dioxide>
oxides of nitrogen. <Phthalocyanine Blue>
oxides of sodium. crystalline silica. <Silica (amorphous)>

11.TOXICOLOGICAL INFORMATION

(Information of components)
Acute toxicity

Ingestion LD50	: 10000mg/kg-Rat <Titanium dioxide>
	: >=5000mg/kg-Rat <Resins, Phthalocyanine Blue>
	: >=50mg/kg-Rat <Pigment Blue(as base dye.)>
	: 1650mg/kg-Cat, 7500mg/kg-Mouse <Ethylene glycol>
	: 3450mg/kg-Mouse <Ethyl alcohol>
	: 3600mg/kg-Mouse <2-Propanol>
	: >10000mg/kg-Rat <Silica (amorphous)>
Inhalation LC50	: 10876mg/kg-Rat <Ethylene glycol>
	: 20000ppm(10hours)-Rat <Ethyl alcohol>
	: 11100ppm(4hours)-Mouse <2-Propanol>
Skin LD50	: 9530uL/kg-Rabbit <Ethylene glycol>
	: 13000mg/kg-Rabbit <2-Propanol>

Local effects
: Irritant; inhalation, skin, eye <Ethylene glycol, Ethyl alcohol>
: Irritant: inhalation, eye <2-Propanol>

Chronic toxicity and long term toxicity
: Central nervous system depressant. <Ethylene glycol>
: Central nervous system depressant, kidney disorders, liver disorders. <Ethyl alcohol>
: Kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies. <2-Propanol>

Signs and Symptos of overexposure and aggravated by exposure

Inhalation	: irritation, coughing <Titanium dioxide>
	: irritation <Resins, Silica (amorphous)>
	: irritation, irritation of mucous membrance <Phthalocyanine Blue>
	: irritation, headache <Ethylene glycol>
	: irritation, difficulty breathing, headache <Ethyl alcohol>
	: irritation, nausea, headache, cough <2-Propanol>
Skin contact	: irritation <Resins, Silica (amorphous)>
	: irritation, redness <Ethylene glycol>
	: irritation, rash, burn, eczema <Ethyl alcohol>
	: irritation, redness, swelling, drunkness <2-Propanol>
Eye contact	: redness <Titanium dioxide>
	: irritation <Resins, Silica (amorphous)>
	: mechanical irritation <Phthalocyanine Blue>
	: irritation, redness <Ethylene glycol>
	: irritation, tearing, burn <Ethyl alcohol>
	: irritation, pain, redness <2-Propanol>
Ingestion	: Physiologically inert, Intestinal obstruction <Titanium dioxide>
	: gastric disturbances <Phthalocyanine Blue>
	: nausea, vomiting <Ethylene glycol>
	: rash, vomiting, digestive disorders <Ethyl alcohol>
	: redness, swelling, nausea, stomach pain <2-Propanol>
Specific effects	: IARC group 3 <Titanium dioxide, 2-Propanol>
	: IARC group 1 (Alcohol beverages) <Ethyl alcohol>

12. ECOLOGICAL INFORMATION

Not available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

International regulations : Not restricted
UN classification number : Not applicable

15. REGULATORY INFORMATION

Regulations (Information of components)

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

EU rabeling : 25%<=Xn;R22 <Ethylene glycol>
: F;R11 <Ethyl alcohol>
: F;R11, Xi;R36, R67 <2-Propanol>

R11: Highly flammable.
R22: Harmful if swallowed.
R36: Irritating to eye.
R67: Vapours may cause drowsiness and dizziness.

CANADA Hazardous Products Act - Ingredient Disclosure List
: 0.1% over <Ethyl alcohol>
: 1% over <Ethylene glycol, 2-Propanol>

Hazard and safety information

Products are manufactured in accordance with European regulation EN71 part 3

16. OTHER INFORMATION

This sheet completes the technical sheet of use but it doesn't replace it.
The information contained in this sheet are based knowledge of the products at the data : (JULY 12, 2001). 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.