

SAFETY DATA SHEET

DATE: 02-Jun-2010
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1. PRODUCT INFORMATION

Product Name: ZIG OPAQUE PEN Super Fine, BR, B, M, F, UF
ZIG OPAQUE PEN Super Fine/Black
Product Number: OP-005, OP-55, OP-88, OP-100, OP-220, OP-330
Recommend Application: Marker (as ink)

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2. HAZARDS IDENTIFICATION

| | | |
|------------------------|---------------------------------------|-------------------------------------------------------|
| GHS Classification | | |
| Physical hazards | Flammable liquid | Category 2 |
| Health hazards | Acute toxicity (Oral) | Out of Division |
| | Acute toxicity (Dermal) | Out of Division |
| | Acute toxicity (Endermic) | Category 3 |
| | Acute toxicity (Inhale : Gas) | Not Classification |
| | Acute toxicity (Inhale : Dust, Mist) | Not Classification |
| | Skin corrosion / irritative | Out of Division |
| | Serious irritate the eyes | Category 2A |
| | Sensitizing property of apparatus | Not Classification |
| | respiratorius and skin | |
| | Generate cell mutagenicity | Category 1A |
| | Carcinogen | Not Classification |
| | Reproductive effect | Category 1A |
| Specially Target Organ | Single exposure | Category 1 (Central nervous system, Kidney) |
| / Systematic Toxicity | | Category 2 (Testis, Liver) |
| | | Category 3 (Respiratory organ system, Nervous system) |
| | Repetition exposure | Category 1 (Liver) |
| | | Category 2 (Nervous system, Testis, Blood system) |
| | Attractant respiratory harmful effect | Category 2 |
| Environmental hazards | Acute aquatic toxicity | Not Classification |
| | Chronic aquatic toxicity | Not Classification |

Label element

Pictogram



Signal words

Danger

Instruction

Hazardous Information

Highly Flammable liquid and Vapor.
 May be harmful if swallowed (oral).
 May be harmful if swallowed and enters airways.
 May be harmful in contact with skin (dermal).
 Causes mild skin irritation.
 Causes serious eye irritation.
 Toxic if inhaled (gas, Vapour, dust, mist)
 May cause drowsiness or dizziness.
 May cause genetic defects.
 May damage fertility or the unborn child.
 Causes damage to organs (Central nervous system, Kidney)
 May cause damage to organs (Testis, Liver)
 Causes damage to organs (Liver) through prolonged or repeated exposure.
 May cause damage to organs (Nervous system, Testis, Blood system)
 through prolonged or repeated exposure.

【Measure for Safety】

Do not use this product until read all safety precaution and understand it. Before use, please get the operating instruction. Keep this product away from the ignition source such as fever, spark, open flame and high temperature. - NO SMOKING

To prevent from exposure, use personal protective equipment or ventilation. Wear protective gloves, glasses and face mask. Use this product in the well ventilated area or outside only. Do not inhale the mist, vapor and spray. Keep the container air tight.

【First Aid】

If a fire occur, fight a fire in the proper way.
 Inhale: Remove the victim to the fresh air area and keep him quiet.
 Swallow: Do not vomit by force. See a doctor.
 Eye: Clean by water in a few minutes. Put off the contacts if possible.
 Skin: Clean by a large of water with soap.
 Skin or Hair: Put off the polluted clothes immediately.
 Exposure: See a doctor.
 If the irritate to the eyes continue, see a doctor. If feel bad, see a doctor.

【Storage】

Keep the container air-tight, store in the cool and well ventilated area and locked.

【Disposal】

For dispose the content and container, entrust to the special waste disposer authorized by the governor of prefectural and city governments.

Country / Community Information

3. COMPOSITION AND INGREDIENT INFORMATION

Single, Mixture: Mixture

Ingredient and content

| Ingredient name | CAS No. | Concentration wt% |
|-----------------------------------------|----------|-------------------|
| Methylisobutylketone | 108-10-1 | 22 - 30 |
| 2-Methoxy ethanol (Methyl cellosolve) | 109-86-4 | 9 - 24 |
| Methyl di glycol | 111-77-3 | 3 - 6 |
| Ethanol | 64-17-5 | 10 - 24 |
| Isopropyl alcohol | 67-63-0 | 1 - 3 |
| Dye | - | 20 - 30 |
| | Amount | 100 |

4. FIRST AID

- For Inhale Remove the victim to the fresh air area. If feel bad, see a doctor.
- For Skin Put off the all polluted clothes immediately. Clean with the proper temp. and slow flowing water for over 15 minutes. If have irritate the skin, see a doctor. Call a doctored if feel bad. Before re-use the put off clothes, clean it up and remove the pollution.
- For Eyes Put off the contacts if possible, and continue to clean. Clean the eyes carefully for a few minutes. If the eyes get this product, clean the eye immediately and wash away completely. If the cleaning eyes not enough, it may cause irreversible eye damage.
If irritate to the eyes continue, see a doctor.
- For Swallow Call a doctor, if feel bad. Rinse the mouth out. Do not have the victim vomit.
- Expected acute symptom and late symptom:
Sialorrhea, face flash, cough, dizzy, lethargy, headache, sore throat, vomition
- Most important sign and symptom:
- Protect the person received first aid:
Rescuer must wear proper protective equipment according to the situation.
- Special notandum for doctor: Symptom will appear later, so that if the patient exposed excessively, it needs medical follow progress.

5. FIRE-FIGHTING MEASURE

- Extinguishing Media: Small fire / Carbon dioxide, dry chemical extinguishing media, water spray, alcoholic resistance fire foam.
- Great Conflagration: Water spray, mist water, alcoholic resistance fire form.
- Forbidden Extinguishing Media: Cylindrical pouring water.
- Special Dangerous and Harmful Effect: The irritative, toxicity and corrosive gas is generated by fire. The container will be burst by heating. If it is not dangerous, move the container from the fire area.
If it is impossible to move, cool the container and around by spraying water. After extinguishing a fire, cool the container completely by large quantity of water.
- Protect the Person Extinguish a Fire: For fighting fire, wear compressed air open-circuit SBCA and protect equipment for chemical. Fight a fire from up wind.

6. ACCIDENTAL RELEASE MEASURES

- Notandum for Human Body, Protective Equipment and Emergency Measure:
The worker must wear proper protector (refer to section 8) not to get the paint on the skin or into eyes. Do not touch the leakage material or walk into it. Keep the proper distance in all direction as the leakage area immediately. No unauthorized entry. If leakage but not occur a fire, wear the occlusive and impervious protect wear. Stay in the wind. Move away from the low ground.
Ventilate before enter the sealed area.
- Notandum for Environment:
Prevent from influx into the drain ditch, sewer, basement and closed area.
Take notice not to affect the environment by discharge the paint into the river.
- Collect Neutralization:
In small quantity case, absorb the leakage material by dry sand and nonflammable material or collect it in the sealed type container then dispose it. In small quantity case, collect the absorbed material by clean antistatic tools. In large quantity case, yard the leakage material by mound to prevent flow out and lead it into safety area then collect it. In large quantity case, water spray lower the steam temperature but it may not inhibit combustion at the sealed area.
- Containment or Depurant and Equipment:
If it is not danger, stop the leakage. Ground all equipment which need for handle the leakage material. Use steam retard foam for lower the steam concentration.
- Precaution of Second Disaster:
Clear away all ignition source immediately (Do not smoking near around, forbid firework and flame)
In case large steam generating, retard it by mist spray. Call related agency and ask the help.

7. HANDLING AND STORAGE

- Handling Do the equipment measure described on the section 8 and wear protector.
- Local exhaust ventilation, whole ventilation:
Do the local exhaust ventilation and whole ventilation described on section 8. Prevent leakage the liquid and steam as possible.
- Safe handling notandum:
This product irritate the eyes so that care not to get it into the eyes. This product may cause sleep or vertigo, irritate the apparatus respiratorius and damage organ parts so that do not touch, inhale and swallow it. Do not fall, drop, shock or drag the container. Clean hands well after use this product. Use this product outside or well ventilated area only. Avoid touching, refer to the section 10. Keep away from high temperature materials spark and fire, and avoid touching oxidizer and organic peroxide.
- Storage Keep the container airtight and stock it in well ventilated place. Stock in the fulfilled and ventilated and cool place. Keep away from oxidant. Keep away from direct sunlight and fire. The inventory location must be fire-proof construction and the floor must be impermeable to prevent permeate the basement and spill to outside. Lock up the container.
- Dangerous goods if mixed:
Refer to the section 10.
- Container material:
Use the container regulated by fire law and UN transportation law.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Install the eye washing devices and safety shower where handle or stock this product.

Protection Equipment

For apparatus respiratorius:

Wear proper respiratory protect equipment such as gas mask for organic gas (if high concentration, wear air-supplied respirator).

For hands: Wear the gloves designated by manufacturer.

For eyes: Wear the eye protector designated by manufacturer.

For skin and Body: Wear protect boots, oil resistant apron (impermeable and antistatic) and protect clothes (antistatic) designated by manufacturer.

Hygiene Measure

Check the protect equipments regularly with check sheet. Clean hands well after use this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|-----------------------------|-------------------------|----------------|
| Physical Form | Condition (20°C) | Reddish liquid |
| | Odor | Ketone odor |
| | Boiling point | No data |
| | Vapor pressure | No data |
| | Specific gravity (20°C) | 0.96 |
| | pH (against water base) | N/A |
| | Other | No data |
| | Hazardous Information | Flash point |
| Ignition point | | No data |
| Explosion limit | | No data |
| Other Hazardous Information | | No data |

10. STABILITY AND REACTIVITY

- Stability: Under usually storage condition, it is stable.
- Hazardous Reactivity: Nothing
- Avoid Condition: Nothing
- Avoid Touching: Nothing
- Hazardous Decomposition Product:
Generates harmful gas such as carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Harmful ingredient and exposure limit.

| Name | ACGIH(2010) (TLV-TWA) | IARC | OTHER |
|----------------------|--------------------------|------|-----------------------------------|
| Methylisobutylketone | 20ppm | 2B | LD50 = 2080mg/kg (rat oral) |
| 2-Methoxy ethanol | 0.1ppm | - | LD50 = 2460mg/kg (rat oral) |
| Methyl di glycol | - | - | LD50 = 8222mg/kg (rat oral) |
| Ethyl alcohol | STEL 1000ppm | 1 | LD50 = 6200-15000mg/kg (rat oral) |
| Isopropyl alcohol | 200ppm | 3 | LD50 = 3437mg/kg (rat oral) |

Other harmful information relevant to composition:

No data

Harmful information for product:

No data

12. ECOLOGICAL INFORMATION

Acute Hazardous Aquatic Environment

No data

Inveteracy Hazardous Aquatic Environment

No data

13. DISPOSAL CONSIDERATIONS

Residue Waste: For dispose, follow the related regulation and standard of local governments. Ask the licensed industrial waste disposal company or local governments.

For Burning: Spray the incinerator with waste liquid directly or mix with flammable solvent in small quantity to bur Activated sludge process.

Polluted container and package: Clean the container and recycle or treat it in accordance with the related regulation or local governments. If dispose the container, remove the content completely.

14. TRANSPORT INFORMATION

Common: Please follow the section7. Check if there are no leakage from container and take cargo without falling, dropping and damage.

Land Transportation: In case of fall under the Fire Law, Industrial Safety and Health Law, Poisonous Material Control Law follow each relevant mode of transportation.

Marine Transportation: Please follow the Law for Safety of Vessel.

Air Transportation: Please follow the Aviation Law and regulation of ICAO.

UN No. 1210

15. REGULATORY INFORMATION

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility. Outline of Hazardous Material Regulation in Japan.

Industrial Safety and Health Law: Notice object goods (Article 57, section 2, Enforcement regulation 18-21, appendix 9.)

Fire Law: Flammable liquid (class 4)
(Methylisobutylketone, Ethyl alcohol, Isopropyl alcohol, 2-Methoxy ethanol)

Law for Safety of Vessel N/A

Aviation Law: N/A

16. OTHER INFORMATION

Main cited item

JPMA "Data Base for raw material MSDS"
 JPMA "MSDS Guide Book [Mixture (for paint)]" 4th version
 JPMA "MSDS Guide Book [Mixture (for paint)]" 4th version-addenda version
 Solvent pocket book
 Raw material manufacturer MSDS
 Japanese Industrial Standards (JIS) Z 7252 (2009)

Regarding to the description content:

The description content of this data sheet is based on the documentation, information and data that we can garner at the present moment so that it might be change depend on new information.

And it is recommend for usual handling so that in case of special handling, use it before take safety measure that suitable for your application and usage.

The description content is information service and not certification.

N/A = Not Applicable