# Safety Data Sheets

## 1. Identification

| | |
|---|---|
| Product Name | : ES3 ink White |
| Order No. | : SPC-0433W |
| General Use | : Ink for ink jet plotter |
| Product Description | : Solvent pigment ink |
| SDS Number | : 037-S040321 |
| Manufacture | |
| Company Name | : Mimaki Engineering Co., Ltd. |
| Address | : 2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 JAPAN |
| Telephone No. | : +81-268-64-2413 |
| Importer / Distributor Established in USA | |
| Company Name | : MIMAKI USA, INC. |
| Address | : 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A. |
| Telephone No. | : +1-678-730-0100 |
| Emergency Telephone No. | : +81-268-64-2281 |

## 2. Hazards Identification

[GHS Classification]

Physical Hazards

| | |
|---|---|
| Flammable Liquids | : Category 4 |

Health Hazards

| | |
|---|---|
| Acute Toxicity – Oral | : Not classified |
| Acute Toxicity – Dermal | : Not classified |
| Acute Toxicity – Inhalation | : Not classified |
| Skin Corrosion / Irritation | : Category 2 |
| Eye Damage / Irritation | : Category 2 |
| Sensitization – Respiratory | : Not classified |
| Sensitization – Skin | : Not classified |
| Germ Cell Mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Toxic to Reproduction | : Category 1 |
| Specific Target Organ Toxicity (Single Exposure) | : Category 2 (central nerve) |

| | |
|---|---|
| Specific Target Organ Toxicity (Repeated Exposure) | : Not classified |
| Aspiration Hazard | : Not classified |

Environmental Hazards

| | |
|---|---|
| Hazardous to the Aquatic Environment - Acute Hazard | : Not classified |
| Hazardous to the Aquatic Environment - Long Term Hazard | : Not classified |
| Hazardous to the Ozone Layer | : Not classified |

The above list does not include category being non-classifiable or not-applicable.

[GHS Label Elements]

Symbol

Signal Word

Danger

Hazard Statements

H227 Combustible liquid
H315 Causes skin irritation
H319 Causes serious eye irritation
H360 May damage fertility or the unborn child
H371 May cause damage to organs (central nerve)

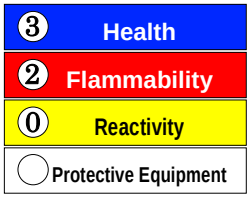
Precautionary Statements

[Prevention]
P201 Obtain SDS (Safety Data Sheet) and printer's operation manual before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from open flames and other ignition sources.-No smoking.
P260 Do not breathe gas/mist.
P264 Wash hands and eyes thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.
[Response]
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do.
Continue rinsing.
P308+P311 If exposed or concerned: Call a POISON CENTER/ doctor.
P321 Specific treatment (see 4-Response on our website/SDS URL:

www.mimaki.co.jp/msds).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P370+P378 In case of fire: Use alcohol-resistant-related fire foam, dry chemical, carbon dioxide, water spray, dry sand for extinguish.
[Storage]
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
[Disposal]
P501 Dispose of contents/container in accordance with local/regional/national/ international regulation (to be specified).

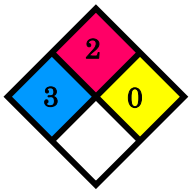
HMIS Rating (scale 0 – 4)

Health = 3
Flammability= 2
Reactivity = 0
Protective Equipment =




NFPA Rating (scale 0 – 4)

Health = 3
Flammability = 2
Instability = 0
Special = 0




CANADIAN WHMIS SYMBOLS : Not applicable

## 3. Composition / Information on Ingredients

| No | Chemical Name | Wt% | CAS No. | Chemical Formula |
|---|---|---|---|---|
| 1 | Diethylene Glycol Diethyl ether | 45-55 | 112-36-7 | $C_8H_{18}O_3$ |
| 2 | Tetraethylene Glycol Dimethyl Ether | 10-20 | 143-24-8 | $C_{10}H_{22}O_5$ |
| 3 | Titanium dioxide | 10-20 | 13463-67-7 | $TiO^2$ |
| 3 | γ -Butyrolactone | <20 | 96-48-0 | $C_4H_6O_2$ |
| 4 | Proprietary organic materials | 1-10 | Trade Secret | - |
| 5 | Tetraethylene Glycol Monobuthyl Ether | 1-5 | 1559-34-8 | $C_{12}H_{26}O_5$ |

## 4. First Aid Measures

| | |
|---|---|
| Inhalation | : IF exposed or concerned: Get medical advice/attention. Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen. |
| Eye Contact | : Immediately flush with room temperature, low pressure and clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if eye irritation continues. If eye irritation persists, Get medical advice/ attention. |
| Skin Contact | : IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention. |
| Ingestion | : IF exposed or concerned: Call a POISON CENTER/ doctor.<br>IF SWALLOWED: Do not induce vomiting. |
| Most important symptoms and effects, both acute and delayed | : Skin: Ink contact with skin may cause irritation, swelling or redness. |
| Note To Physician | : Not necessary |

## 5. Fire Fighting Measures

| | |
|---|---|
| Flammable Properties | : Combustible liquid under Hazard Communication Standard (HCS, U.S.A).<br>Flash point : about 71℃ (Closed cup)<br>Autoflammability: None<br>Explosive properties: 1.4~6.9v/v% as dipropylene glycol mono-methyl ether |
| Extinguishing Media | : Water spray, dry chemical, carbon dioxide or, alcohol foam |
| Unsuitable Extinguishing Media | : None |
| Fire Fighting Instructions | : Extinguish to use fire fighting media or plentiful fog water.<br>Put protection wear without fail in case of firefighting work.<br>Wear full fire-fighting turn-out gear (full bunker gear) and respiratory protection (self-contained breathing apparatus).<br>Do not work in the leeward. |

## 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| For non-emergency personnel | : Eye or Skin protection required during clean-up. Use proper ventilation. |
| For emergency responders | : None |
| Environmental precautions: | : Do not release to sewer, surface- or ground-water. |

Methods and material for containment and cleaning up

| | |
|---|---|
| Advice on how to contain a spill | : Use sponges to wipe-up ink. |
| Advice how to clean-up a spill | : Rinse area with damp cloth. Place waste in closed container for disposal.<br>Wash hands with soap and water. |
| Any other information: | : Do not dispose of waste to the sewer. |
| Reference to other sections | : Please refer SECTION 13 for disposal. |

## 7. Handling and Storage

| | |
|---|---|
| Handling | : Obtain SDS (Safety Data Sheet) and printer's manual instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective equipment (see 8-section). Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink ink. Do not dismantle cartridge. Make sure cartridge is dry before insertion into printer housing. Avoid contact with skin, eyes or clothing. In the case of skin contact, wash with soap and water. |
| Storage | : Store locked up. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store the cartridge with oxidizing agents or explosives. |
| SPECIFIC USES | : Not specified |

## 8. Exposure Controls / Personal Protection

Exposure Limit Values

| No | Chemical Name | | TWA |
|---|---|---|---|
| 1 | Diethylene glycol diethyl ether (CAS No. 112-36-7) | California OELs | The 8-Hour TWA Exposure Value : 5 ppm (33mg/m$^{3)}$ |
| 2 | Titanium dioxide (CAS No. 13463-67-7) | OSHA PEL | 15mg/m$^3$ |
| | | ACGIH TLV | 10mg/m$^3$ |

California OELs : California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Exposure Controls

Occupational Exposure Controls

Engineering Controls : Use exhaust ventilation to avoid from exposure.

Personal Protection

Respiratory Protection : An air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where air-borne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or in any other circumstances where air-purifying respirators may not provide adequate protection.


Hand Protection : Wear gloves that resist organic solvents and chemicals.


Eye Protection : Wear coverall, chemical goggles and face shield when handling.


Skin Protection : To prevent any contact, wear impervious clothing such as gloves, apron, boots, or whole body suits made from neoprene, as appropriate.


Environmental Exposure Controls

: Not available

## 9. Physical and Chemical Properties

| | | |
|---|---|---|
| Appearance | - Physical State | : liquid |
| | - Color | : White |
| Odor | | : Slightly |
| pH | | : Not Applicable |
| Boiling Point / Boiling Range | | : Not available |
| Melting Point / Melting Range | | : Not available |
| Decomposition Temperature | | : Not available |
| Flash Point | | : about 71℃ (Closed cup) |
| Auto ignition temperature | | : Not available |
| Explosive Properties | | : Explosive limits: 1.4~6.9v/v% as γ-Butyrolactone |
| Relative Density | | : Not available |
| Solubility (ies) | | : Soluble |
| Viscosity | | : No date available |
| Vapor Density | | : Greater than 1 (air = 1) |
| Evaporation Rate | | : Not available |
| VOC | | : Not available |

## 10. Stability and Reactivity

| | |
|---|---|
| Conditions to Avoid | : High and freezing temperatures |
| Stability | : Stable under normal temperature |
| Materials to Avoid | : Oxidizers and explosives |
| Hazardous Reactions / Decomposition Products | : To burn this product may be produce toxic gases. |

## 11. Toxicological Information

| | |
|---|---|
| Acute Toxicity | : Not meet the criteria for classification according to EU Directive 1999/45/EC |
| Eye Irritation | : Diethylene Glycol Diethyl ether : Category 2A (GHS Classification)<br>γ-Butyrolactone : Category 2A (GHS Classification) |
| Skin Irritation | : Diethylene Glycol Diethyl ether : Category 2 (GHS Classification) |

| | |
|---|---|
| Skin Sensitization | : Not meet the criteria for classification according to EU Directive 1999/45/EC |
| Mutagenicity | : Not meet the criteria for classification according to EU Directive 1999/45/EC |
| Carcinogenicity | : Titanium dioxide is classified as “possibly carcinogen to human” (Group 2B) in animal chronic inhalation studies. The tumor formulation observed in only rats with animal chronic inhalation study are attributed to “lung overloading”, a generic response to excessive amounts of any dust retained in the lungs for a prolonged interval. Use of this product, as intended does not result in inhalation of excessive dust. Epidemiological study to date have not revealed any evidence of the relation between exposure to titanium dioxide and diseases of the reparatory tract beyond general effects of dust. |
| Reproductive Toxicity | : Tetraethylene Glycol Dimethyl Ether : Category 1B (GHS Classification) |
| Specific Target Organ Toxicity (Single Exposure) | : γ-Butyrolactone : Category 2 (central nerve) (GHS Classification)<br>Category 3 (drowsiness or dizziness)<br>(GHS Classification) |

## 12. Ecological Information

Handling is noted because it might influence the environment when leaking and abandoning it.
Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.

| | |
|---|---|
| Ecotoxicity | : Not available |
| Persistence and Degradability | : Not available |
| Bioaccumulative Potential | : Not available |
| Results of PBT and vPvB assessment | : Has not carried out PBT and vPvB assessment |
| Other Adverse Effects | : Not available |

## 13. Disposal Considerations

: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Comply with all USA, national and local regulations.
Do not dump this product into sewers, on the ground or into any body of water.

## 14. Transport Information

Check a thing without a leak in a container.
Perform prevention of collapse of cargo surely.

Us Department of Transportation (DOT)

| | |
|---|---|
| Hazardous Materials | : Not Applicable |

Sea Transport (IMDG)

| | |
|---|---|
| Class | : Not Applicable |
| Packing Group (PG) | : Not Applicable |
| UN Number | : Not Applicable |
| Proper Shipping Name | : Not Applicable |
| Marine Pollutant | : Not Applicable |

Air Transport (ICAO/IATA)

| | |
|---|---|
| Class | : Not Applicable |
| Packing Group(PG) | : Not Applicable |
| UN Number | : Not Applicable |
| Proper Shipping Name | : Not Applicable |

## 15. Regulatory Information

| | |
|---|---|
| TSCA Section 4(a) Final Test Rules Regulated | : Not regulated |
| TSCA Section 5 Significant New Use Rule Regulation proposed | : Ingredient : Diethylene glycol diethyl ether (CAS No. 112-36-7)<br>Reference: 76FR40850<br>Ingredient : Tetraethylene glycol dimethyl ether (CAS No. 143-24-8)<br>Reference: 76FR40850 |
| TSCA Section 8(a) Preliminary Assessment Information Rule (PAIR) | : Not regulated |
| TSCA Section 12(b) One-Time Export Notification Regulated | Ingredient : Diethylene glycol diethyl ether (CAS No. 112-36-7)<br>Reference: TSCA 5 Proposed SNUR<br>Ingredient : Tetraethylene glycol dimethyl ether (CAS No. 143-24-8)<br>Reference: TSCA 5 Proposed SNUR |
| Clean Air Act Section 112, Hazardous Air Pollutants | : Diethylene glycol diethyl ether (CAS No. 112-36-7) |
| EPCRA (SARA Title III) Section 313 | : Diethylene glycol diethyl ether (CAS No. 112-36-7) |
| California Proposition 65 | : Titanium dioxide (CAS No. 13463-67-7) |
| Others | : Please refer to any other federal, state and local regulations. |

## 16. Other Information

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