1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name: DUFLONAR F152 YELLOW
Intended Use: Solvent-Based Decorative Paint
Manufacturer: Nippon Paint (S) Co. Pte Ltd
No. 1 First Lok Yang Road
Jurong Singapore 629728
Emergency Phone Number: (65) 6 265 5355
Fax Numbers: (65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard
Flammable Hazard Category 2

Health Hazard
Skin corrosion/irritation Category 2
Serious eye damage/irritation Category 2
Reproductive toxicity Category 2
Specific target organ toxicity:
- Repeated exposure Category 2
Asphyxiation hazard Category 1

Environmental Hazard
Not classified as an environmental hazard under GHS criteria

Hazard statements
H225: Highly flammable liquid and vapour
H304: May be fatal if swallowed and enters airways
H315: Causes skin irritation
H319: Causes serious eye irritation
H361: Suspected of damaging fertility or the unborn child
H373: May cause damage to organs through prolonged or repeated exposure

Precautionary statements
P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/light/equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P264: Wash hands thoroughly after handling
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P331: Do NOT induce vomiting
P362: Take off contaminated clothing and wash before reuse
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+352: IF ON SKIN: Wash with soap and water
P308+313: IF exposed or concerned: Get medical advice/attention
P332+313: If skin irritation occurs: Get medical advice/attention
P337+313: If eye irritation persists: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Storage
P405: Store locked up
P403+235: Store in a well ventilated place. Keep cool

Disposal
P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local or national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

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<td>112-34-5</td>
<td>2-5</td>
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<td>-</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
</tr>
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4. FIRST-AID MEASURES

INHALATION
- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT
- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol-resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH-approved self-contained breathing apparatus.
- Use water spray to cool fire-exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

**METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP**

- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

### 7. HANDLING AND STORAGE

**PRECAUTIONS FOR SAFE HANDLING**

- Use appropriate personal protective equipment.
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

**CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES**

- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**CONTROL PARAMETERS/OCCUPATIONAL LIMITS**

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA ppm</th>
<th>mg/m3</th>
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<th>mg/m3</th>
</tr>
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<tbody>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**APPROPRIATE ENGINEERING CONTROL MEASURES**

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

**PERSONAL PROTECTION**

- **Respiratory Protection:** Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
- **Hand Protection:** Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.

Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 100 and 231 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>7 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 230 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65 - 70 KU</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

REACTIVITY
○ No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY
○ The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION
○ Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID
○ Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS
○ When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION
There is no data available on the product itself.
Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50 (Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>1300</td>
</tr>
<tr>
<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
<tr>
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<td>Data not available</td>
</tr>
</tbody>
</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
No information available on the product

**Reproductive toxicity**
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**
Specific Target Organ Toxicity (STOT)-repeated exposure
No information available on the product

Asphyxiation hazard
May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity - No data available

Persistence and degradability
Biodegradation - No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Result of PBT and vPvB assessment
No data available

Other adverse effects
There is no ecotoxicological test data available on the product itself.
The product should not be allowed to enter drains or water courses.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.
All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT
Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II

SEA TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

**UN Number:** 1263

**Proper shipping name:** PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

**Class:** Class 3

**Packaging Group:** II

**Marine Pollutant** No

**SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)**

Not applicable

**AIR TRANSPORT**

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

**UN Number:** 1263

**Proper shipping name:** PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

**Class:** Class 3

**Packaging Group:** II

### 15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

### 16. OTHER INFORMATION

Revision Date/Version No.: 09-03-2017 /3/2.1.1

History

Previous Revision Date /Version No.: 18-03-2015 /3/1.1.1

**Abbreviation**

ACGIH American Conference of Governmental Industrial Hygienists

TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IARC International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the
information is provided without any representation or warranty, expressed or implied, regarding its
accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond
our control and may be beyond our knowledge, for this and other reasons, we make no guarantee
of results and assume no liability for damages incurred by the use of this product. Please be
reminded that all chemicals may present unknown health hazards and should be used with caution.
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GHS Pictogram

Signal Word
Danger

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<td>5-11</td>
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- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
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- Keep public away.
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Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

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<td>434.00</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.

Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 100 and 231 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>7 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
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<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65 - 70 KU</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**REACTIVITY**
- No dangerous reaction known under condition of normal use.

**CHEMICAL STABILITY**
- The product is stable under recommended storage and handling conditions. (see section 7)

**POSSIBILITY OF HAZARDOUS REACTION**
- Under normal conditions of storage and use, hazardous reaction will not occur.

**CONDITIONS TO AVOID**
- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

**HAZARDOUS DECOMPOSITION PRODUCTS**
- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

### 11. TOXICOLOGICAL INFORMATION
There is no data available on the product itself.
Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
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<tr>
<th>Substances</th>
<th>Oral LD50 (Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
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<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
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<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
No information available on the product

**Reproductive toxicity**
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**
No information available on the product

**Specific Target Organ Toxicity (STOT)-repeated exposure**
No information available on the product

**Asphyxiation hazard**
May be harmful if swallowed and enters airways

### 12. ECOLOGICAL INFORMATION

**Toxicity**
Aquatic toxicity - No data available

**Persistence and degradability**
Biodegradation - No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

**Result of PBT and vPvB assessment**
No data available

**Other adverse effects**
There is no ecotoxicological test data available on the product itself.
The product should not be allowed to enter drains or water courses.

### 13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.
All federal, state and local environmental regulations shall be observed.

### 14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

**LAND TRANSPORT**

Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

UN Number: 1263

Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3

Packaging Group: II

**SEA TRANSPORT**
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

UN Number: 1263

Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II
Marine Pollutant: No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)

Not applicable

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

UN Number: 1263

Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods

- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.

- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.

- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.

- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

16. OTHER INFORMATION

Revision Date/Version No.: 09-03-2017 /3/2.1.1
History
Previous Revision Date /Version No.: 18-03-2015 /3/1.1.1

Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IARC International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.
1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

   Product Name: DUFLONAR F552 BLUE
   Intended Use: Solvent-Based Decorative Paint
   Manufacturer: Nippon Paint (S) Co. Pte Ltd
                No. 1 First Lok Yang Road
                Jurong Singapore 629728
   Emergency Phone Number: (65) 6 265 5355
   Fax Numbers: (65) 6 264 1603

2. HAZARDS IDENTIFICATION

   GHS Classification:

   Physical Hazard
   Flammable Hazard                  Category 2

   Health Hazard
   Skin corrosion/irritation          Category 2
   Serious eye damage/irritation      Category 2
   Carcinogenicity                    Category 2
   Reproductive toxicity              Category 2
   Specific target organ toxicity:
     - Repeated exposure              Category 2
     Asphyxiation hazard              Category 1

   Environmental Hazard
   Not classified as an environmental hazard under GHS criteria

   GHS Pictogram

   Signal Word
   Danger

   Hazard statements
   H225: Highly flammable liquid and vapour
   H304: May be fatal if swallowed and enters airways
H315: Causes skin irritation  
H319: Causes serious eye irritation  
H351: Suspected of causing cancer  
H361: Suspected of damaging fertility or the unborn child  
H373: May cause damage to organs through prolonged or repeated exposure  

Precautionary statements  
P201: Obtain special instructions before use  
P202: Do not handle until all safety precautions have been read and understood  
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking  
P223: Keep container tightly closed  
P240: Ground/bond container and receiving equipment  
P241: Use explosion-proof electrical/ventilating/light/equipment  
P242: Use only non-sparking tools  
P243: Take precautionary measures against static discharge  
P260: Do not breathe dust/fume/gas/mist/vapours/spray  
P264: Wash hands thoroughly after handling  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P281: Use personal protective equipment as required  

Response  
P314: Get medical advice/attention if you feel unwell  
P321: Specific treatment (see Section 4 of SDS)  
P331: Do NOT induce vomiting  
P362: Take off contaminated clothing and wash before reuse  
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P302+352: IF ON SKIN: Wash with soap and water  
P308+313: IF exposed or concerned: Get medical advice/attention  
P332+313: If skin irritation occurs: Get medical advice/attention  
P337+313: If eye irritation persists: Get medical advice/attention  
P370+378: In case of fire: Use appropriate media for extinction  
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing  

Storage  
P405: Store locked up  
P403+235: Store in a well ventilated place. Keep cool  

Disposal  
P501: Dispose of contents/container to appropriate waste site or reclamer in accordance with local or national regulations  

### 3. COMPOSITION / INFORMATION ON INGREDIENTS  

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>7-16</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>7-16</td>
</tr>
<tr>
<td>C.I.Pigment blue 28</td>
<td>1345-16-0</td>
<td>7-14</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>111-76-2</td>
<td>5-11</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>5-11</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>112-34-5</td>
<td>2-5</td>
</tr>
</tbody>
</table>
4. FIRST-AID MEASURES

INHALATION
- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT
- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
- Use appropriate personal protective equipment.
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA ppm</th>
<th>mg/m3</th>
<th>OSHA PEL-TWA ppm</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>C.I. Pigment blue 28</td>
<td>-</td>
<td>0.02</td>
<td>-</td>
<td>0.10</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROL MEASURES
- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.
PERSONAL PROTECTION

Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.

Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.

Eye Protection: Use of safety glasses or goggles with side shields is recommended.

Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

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10. STABILITY AND REACTIVITY

REACTIVITY

○ No dangerous reaction known under condition of normal use.

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○ The product is stable under recommended storage and handling conditions. (see section 7)

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CONDITIONS TO AVOID

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HAZARDOUS DECOMPOSITION PRODUCTS
When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.

Toxicological information of substances:

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Harmful if swallowed

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<td>10000</td>
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<td>1300</td>
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**Acute dermal/skin toxicity**
May be harmful if in contact with skin

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<th>Substances</th>
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<td>12196</td>
</tr>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>C.I.Pigment blue 28</td>
<td>Data not available</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
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<td>Diethylene glycol monobutyl ether</td>
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**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

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<th>Substances</th>
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**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

Carcinogenicity
No information available on the product

Reproductive toxicity
No information available on the product

Specific Target Organ Toxicity (STOT)-single exposure
No information available on the product

Specific Target Organ Toxicity (STOT)-repeated exposure
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Asphyxiation hazard
May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity - No data available

Persistence and degradability
Biodegradation - No data available

Bioaccumulative potential
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Mobility in soil
No data available

Result of PBT and vPvB assessment
No data available

Other adverse effects
There is no ecotoxicological test data available on the product itself. The product should not be allowed to enter drains or water courses.

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The product should not be allowed to enter drains and watercourses. Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor. All federal, state and local environmental regulations shall be observed.

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Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT
Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II

SEA TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II
Marine Pollutant No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)
Not applicable

AIR TRANSPORT
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
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16. OTHER INFORMATION
Revision Date/Version No.: 09-03-2017 /3/2.1.1
History
Previous Revision Date /Version No.: 18-03-2015 /3/1.1.1

Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IARC International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.
1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>DUFLONAR F654 GREEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intended Use:</td>
<td>Solvent-Based Decorative Paint</td>
</tr>
<tr>
<td>Manufacturer:</td>
<td>Nippon Paint (S) Co. Pte Ltd No. 1 First Lok Yang Road Jurong Singapore 629728</td>
</tr>
<tr>
<td>Emergency Phone Number:</td>
<td>(65) 6 265 5355</td>
</tr>
<tr>
<td>Fax Numbers:</td>
<td>(65) 6 264 1603</td>
</tr>
</tbody>
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2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard
- Flammable Hazard Category 2

Health Hazard
- Skin corrosion/irritation Category 2
- Serious eye damage/irritation Category 2
- Reproductive toxicity Category 2
- Specific target organ toxicity:
  - Repeated exposure Category 2
  - Asphyxiation hazard Category 1

Environmental Hazard
- Not classified as an environmental hazard under GHS criteria

GHS Pictogram

Signal Word
- Danger

Hazard statements
- H225: Highly flammable liquid and vapour
- H304: May be fatal if swallowed and enters airways
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H361: Suspected of damaging fertility or the unborn child
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**Precautionary statements**
P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
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P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P264: Wash hands thoroughly after handling
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

**Response**
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P331: Do NOT induce vomiting
P362: Take off contaminated clothing and wash before reuse
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+352: IF ON SKIN: Wash with soap and water
P308+313: IF exposed or concerned: Get medical advice/attention
P332+313: If skin irritation occurs: Get medical advice/attention
P337+313: If eye irritation persists: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P301+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

**Storage**
P405: Store locked up
P403+235: Store in a well ventilated place. Keep cool

**Disposal**
P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local or national regulations

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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100%
4. FIRST-AID MEASURES

INHALATION
- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT
- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
○ Contain spilled liquid with sand or other non-combustible absorbent materials.
○ Wash area and prevent runoff into drains and sewerage system.
○ Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
○ Clean up all spills immediately.
○ Absorb spill with absorbent and inert material, then place in container.
○ Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
○ Use appropriate personal protective equipment.
○ Keep out of reach of children.
○ Handle containers with care. Open slowly in order to control possible pressure release.
○ Do not pressurize containers.
○ Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
○ For personal protection, see section 8.
○ Use only in areas from which all naked lights and other sources of ignition have been excluded.
○ Take precautionary measures against static discharge.
○ Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
○ Keep containers tightly closed.
○ Containers that are opened should be properly resealed and kept upright to prevent leakage.
○ Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
</tr>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROL MEASURES
○ Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
○ Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION
Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.

Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 100 and 231 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>7 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 230 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65 - 70 KU</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

- REACTIVITY
  - No dangerous reaction known under condition of normal use.

- CHEMICAL STABILITY
  - The product is stable under recommended storage and handling conditions. (see section 7)

- POSSIBILITY OF HAZARDOUS REACTION
  - Under normal conditions of storage and use, hazardous reaction will not occur.

- CONDITIONS TO AVOID
  - Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

- HAZARDOUS DECOMPOSITION PRODUCTS
  - When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION
There is no data available on the product itself.
Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>1300</td>
</tr>
<tr>
<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
No information available on the product

**Reproductive toxicity**
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**
No information available on the product

**Specific Target Organ Toxicity (STOT)-repeated exposure**
No information available on the product

**Asphyxiation hazard**
May be harmful if swallowed and enters airways

### 12. ECOLOGICAL INFORMATION

**Toxicity**
Aquatic toxicity - No data available

**Persistence and degradability**
Biodegradation - No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

**Result of PBT and vPvB assessment**
No data available

**Other adverse effects**
There is no ecotoxicological test data available on the product itself.
The product should not be allowed to enter drains or water courses.

### 13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.
All federal, state and local environmental regulations shall be observed.

### 14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

**LAND TRANSPORT**
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Packaging Group: II

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Class: Class 3
Packaging Group: II
Marine Pollutant: No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)
Not applicable

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</tr>
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<td>Balance</td>
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- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
○ Contain spilled liquid with sand or other non-combustible absorbent materials.
○ Wash area and prevent runoff into drains and sewerage system.
○ Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
○ Clean up all spills immediately.
○ Absorb spill with absorbent and inert material, then place in container.
○ Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
○ Use appropriate personal protective equipment.
○ Keep out of reach of children.
○ Handle containers with care. Open slowly in order to control possible pressure release.
○ Do not pressurize containers.
○ Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
○ For personal protection, see section 8.
○ Use only in areas from which all naked lights and other sources of ignition have been excluded.
○ Take precautionary measures against static discharge.
○ Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
○ Keep containers tightly closed.
○ Containers that are opened should be properly resealed and kept upright to prevent leakage.
○ Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
</tr>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROL MEASURES
○ Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
○ Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid
Odour: Aromatic hydrocarbon odour
Odour threshold: Not available
pH: Not available
Melting point/freezing point: Not available
Initial boiling point and boiling range: Between 100 and 231 °C
Flash point: 7 °C
Evaporation rate: Not available
Flammability (solid, gas): Not applicable
Lower flammability or explosive limit: 0.9 % by vol
Upper flammability or explosive limit: 7 % by vol
Vapour pressure: Not available
Vapour density: > 1.00 (Vapour is heavier than air)
Relative density: Not available
Solubility: Not Miscible in water
Partition coefficient: Not available
Auto-ignition temperature: > 230 °C
Decomposition temperature: Not available
Viscosity: 65 - 70 KU

10. STABILITY AND REACTIVITY

REACTIVITY
○ No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY
○ The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION
○ Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID
○ Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS
○ When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION
There is no data available on the product itself.

Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>1300</td>
</tr>
<tr>
<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
No information available on the product

**Reproductive toxicity**
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**
No information available on the product

**Specific Target Organ Toxicity (STOT)-repeated exposure**
No information available on the product

**Asphyxiation hazard**
May be harmful if swallowed and enters airways

---

### 12. ECOLOGICAL INFORMATION

**Toxicity**
- Aquatic toxicity - No data available

**Persistence and degradability**
- Biodegradation - No data available

**Bioaccumulative potential**
- No data available

**Mobility in soil**
- No data available

**Result of PBT and vPvB assessment**
- No data available

**Other adverse effects**
- There is no ecotoxicological test data available on the product itself.
- The product should not be allowed to enter drains or water courses.

---

### 13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.
All federal, state and local environmental regulations shall be observed.

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### 14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

**LAND TRANSPORT**
- Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.
- UN Number: 1263
- Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
- Class: Class 3
- Packaging Group: II

**SEA TRANSPORT**
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.

UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II
Marine Pollutant: No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)
Not applicable

AIR TRANSPORT
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

16. OTHER INFORMATION

Revision Date/Version No.: 09-03-2017 /3/2.1.1
History
Previous Revision Date /Version No.: 18-03-2015 /3/1.1.1

Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IARC International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.
1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name: DUFLONAR F960 WHITE
Intended Use: Solvent-Based Decorative Paint
Manufacturer: Nippon Paint (S) Co. Pte Ltd
No. 1 First Lok Yang Road
Jurong Singapore 629728
Emergency Phone Number: (65) 6 265 5355
Fax Numbers: (65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard
Flammable Hazard Category 2

Health Hazard
Skin corrosion/irritation Category 2
Serious eye damage/irritation Category 2
Reproductive toxicity Category 2
Specific target organ toxicity:
- Repeated exposure Category 2
Asphyxiation hazard Category 1

Environmental Hazard
Not classified as an environmental hazard under GHS criteria

GHS Pictogram

Signal Word
Danger

Hazard statements
H225: Highly flammable liquid and vapour
H304: May be fatal if swallowed and enters airways
H315: Causes skin irritation
H319: Causes serious eye irritation
H361: Suspected of damaging fertility or the unborn child
H373: May cause damage to organs through prolonged or repeated exposure

Precautionary statements
P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/light/equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P264: Wash hands thoroughly after handling
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P331: Do NOT induce vomiting
P362: Take off contaminated clothing and wash before reuse
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+352: IF ON SKIN: Wash with soap and water
P308+313: IF exposed or concerned: Get medical advice/attention
P332+313: If skin irritation occurs: Get medical advice/attention
P337+313: If eye irritation persists: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Storage
P405: Store locked up
P403+235: Store in a well ventilated place. Keep cool

Disposal
P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local or national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>7-15</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>6-13</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>111-76-2</td>
<td>5-11</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>5-10</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>112-34-5</td>
<td>2-5</td>
</tr>
<tr>
<td>Substances determined to be non-hazardous</td>
<td>-</td>
<td>Balance</td>
</tr>
</tbody>
</table>

100%
4. FIRST-AID MEASURES

INHALATION
- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT
- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
● Contain spilled liquid with sand or other non-combustible absorbent materials.
● Wash area and prevent runoff into drains and sewerage system.
● Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP

● Clean up all spills immediately.
● Absorb spill with absorbent and inert material, then place in container.
● Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
● Use appropriate personal protective equipment.
● Keep out of reach of children.
● Handle containers with care. Open slowly in order to control possible pressure release.
● Do not pressurize containers.
● Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
● For personal protection, see section 8.
● Use only in areas from which all naked lights and other sources of ignition have been excluded.
● Take precautionary measures against static discharge.
● Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
● Keep containers tightly closed.
● Containers that are opened should be properly resealed and kept upright to prevent leakage.
● Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA ppm</th>
<th>ACGIH TLV-TWA mg/m3</th>
<th>OSHA PEL-TWA ppm</th>
<th>OSHA PEL-TWA mg/m3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROL MEASURES
● Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
● Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.

Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.

Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 100 and 231 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>7 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 230 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65 - 70 KU</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

REACTIVITY

○ No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY

○ The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION

○ Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID

○ Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS

○ When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION
There is no data available on the product itself.
Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
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<td>5660</td>
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</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
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<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
Titanium Dioxide

The International Agency for Research on Cancer (IARC) has classified Titanium Dioxide as possibly carcinogenic to humans (Group 2B) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals

**Reproductive toxicity**
Specific Target Organ Toxicity (STOT)-single exposure
No information available on the product

Specific Target Organ Toxicity (STOT)-repeated exposure
No information available on the product

Asphyxiation hazard
May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity - No data available

Persistence and degradability
Biodegradation - No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Result of PBT and vPvB assessment
No data available

Other adverse effects
There is no ecotoxicological test data available on the product itself. The product should not be allowed to enter drains or water courses.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses. Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor. All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT

Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II

SEA TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II
Marine Pollutant: No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)

Not applicable

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
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- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
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- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
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16. OTHER INFORMATION

Revision Date/Version No.: 09-03-2017 /3/2.1.1
History
Previous Revision Date /Version No.: 18-03-2015 /3/1.1.1
Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IARC International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.
1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name: DUFLONAR F1599 RED
Intended Use: Solvent-Based Decorative Paint
Manufacturer: Nippon Paint (S) Co. Pte Ltd
No. 1 First Lok Yang Road
Jurong Singapore 629728
Emergency Phone Number: (65) 6 265 5355
Fax Numbers: (65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard
Flammable Hazard Category 2

Health Hazard
Skin corrosion/irritation Category 2
Serious eye damage/irritation Category 2
Reproductive toxicity Category 2
Specific target organ toxicity:
- Repeated exposure Category 2

Asphyxiation hazard Category 1

Environmental Hazard
Not classified as an environmental hazard under GHS criteria

GHS Pictogram

Signal Word
Danger

Hazard statements
H225: Highly flammable liquid and vapour
H304: May be fatal if swallowed and enters airways
H315: Causes skin irritation
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P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
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P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P264: Wash hands thoroughly after handling
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P331: Do NOT induce vomiting
P362: Take off contaminated clothing and wash before reuse
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+352: IF ON SKIN: Wash with soap and water
P308+313: IF exposed or concerned: Get medical advice/attention
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P337+313: If eye irritation persists: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Storage
P405: Store locked up
P403+235: Store in a well ventilated place. Keep cool

Disposal
P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local or national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

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<td>111-76-2</td>
<td>5-11</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>5-11</td>
</tr>
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<td>112-34-5</td>
<td>2-5</td>
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<td>Balance</td>
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4. FIRST-AID MEASURES

INHALATION
- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT
- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.
ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
- Use appropriate personal protective equipment.
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
</tr>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>-</td>
<td>50.00</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROL MEASURES
- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.
Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 100 and 231 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>7 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 230 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65 - 70 KU</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

REACTIVITY
- No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY
- The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION
- Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID
- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS
- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.
11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.
Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>Data not available</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>1300</td>
</tr>
<tr>
<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>Data not available</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>Data not available</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
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</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
No information available on the product

**Reproductive toxicity**
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**
No information available on the product

**Specific Target Organ Toxicity (STOT)-repeated exposure**
No information available on the product

**Asphyxiation hazard**
May be harmful if swallowed and enters airways

### 12. ECOLOGICAL INFORMATION

**Toxicity**
Aquatic toxicity - No data available

**Persistence and degradability**
Biodegradation - No data available

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**Mobility in soil**
No data available

**Result of PBT and vPvB assessment**
No data available

**Other adverse effects**
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Class: Class 3
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Packaging Group: II
Marine Pollutant No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)

Not applicable

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<td>7-16</td>
</tr>
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<td>2-Butoxyethanol</td>
<td>111-76-2</td>
<td>5-12</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>1332-37-2</td>
<td>5-11</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>5-11</td>
</tr>
<tr>
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<td>Balance</td>
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- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

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5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.
ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
- Use appropriate personal protective equipment.
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA ppm</th>
<th>mg/m3</th>
<th>OSHA PEL-TWA ppm</th>
<th>mg/m3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>100</td>
<td>434.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Toluene</td>
<td>-</td>
<td>188.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>-</td>
<td>50.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>10</td>
<td>67.50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

APPROPRIATE ENGINEERING CONTROL MEASURES
- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION
Respiratory Protection: Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection: Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection: Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection: Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 100 and 231 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>7 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 230 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65 - 70 KU</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

REACTIVITY
- No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY
- The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION
- Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID
- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS
- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.
11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.

Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>1300</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Red Iron oxide</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

**Skin corrosion or irritation**
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**
May be an eye irritant

**Respiratory or skin sensitisation**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**
No information available on the product

**Carcinogenicity**
No information available on the product

**Reproductive toxicity**
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**
No information available on the product

**Specific Target Organ Toxicity (STOT)-repeated exposure**
No information available on the product

**Asphyxiation hazard**
May be harmful if swallowed and enters airways

---

### 12. ECOLOGICAL INFORMATION

**Toxicity**
Aquatic toxicity - No data available

**Persistence and degradability**
Biodegradation - No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

**Result of PBT and vPvB assessment**
No data available

**Other adverse effects**
There is no ecotoxicological test data available on the product itself. The product should not be allowed to enter drains or water courses.

---

### 13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses. Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor. All federal, state and local environmental regulations shall be observed.

---

### 14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

**LAND TRANSPORT**

Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.

UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)

Class: Class 3
Packaging Group: II

SEA TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II
Marine Pollutant: No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)
Not applicable

AIR TRANSPORT
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION
Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

16. OTHER INFORMATION
Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.
1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Name: DUFLONAR FLASH PRIMER YELLOW
Intended Use: Solvent-Based Decorative Paint
Manufacturer: Nippon Paint (S) Co. Pte Ltd
   No. 1 First Lok Yang Road
   Jurong Singapore 629728
Emergency Phone Number: (65) 6 265 5355
Fax Numbers: (65) 6 264 1603

2. HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazard
Flammable Hazard Category 2

Health Hazard
Skin corrosion/irritation Category 2
Serious eye damage/irritation Category 2
Skin sensitization Category 1
Reproductive toxicity Category 2
Specific target organ toxicity:
   - Single exposure Category 3
   - Repeated exposure Category 2
Asphyxiation hazard Category 1

Environmental Hazard
Not classified as an environmental hazard under GHS criteria

GHS Pictogram

Signal Word
Danger

Hazard statements
H225: Highly flammable liquid and vapour
H304: May be fatal if swallowed and enters airways
H315: Causes skin irritation
H317: May cause an allergic skin reaction
H319: Causes serious eye irritation
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
H361: Suspected of damaging fertility or the unborn child
H373: May cause damage to organs through prolonged or repeated exposure

Precautionary statements
P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/light/equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P264: Wash hands thoroughly after handling
P271: Use only outdoors or in a well-ventilated area
P272: Contaminated work clothing should not be allowed out of the workplace
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response
P312: Call a POISON CENTER or doctor/physician if you feel unwell
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P331: Do NOT induce vomiting
P362: Take off contaminated clothing and wash before reuse
P363: Wash contaminated clothing before reuse
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+352: IF ON SKIN: Wash with soap and water
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P308+313: IF exposed or concerned: Get medical advice/attention
P332+313: If skin irritation occurs: Get medical advice/attention
P333+313: If skin irritation or a rash occurs: Get medical advice/attention
P337+313: If eye irritation persists: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Storage
P405: Store locked up
P403+233: Store in a well ventilated place. Keep container tightly closed
P403+235: Store in a well ventilated place. Keep cool

Disposal
P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local
or national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>10-22</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>111-76-2</td>
<td>6-12</td>
</tr>
<tr>
<td>Resin</td>
<td>-</td>
<td>4-9</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>2-5</td>
</tr>
<tr>
<td>Bisphenol-A type solid epoxy resin</td>
<td>25036-25-3</td>
<td>1-3</td>
</tr>
<tr>
<td>Strontium chromate</td>
<td>7789-06-2</td>
<td>1-2</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>112-34-5</td>
<td>1-2</td>
</tr>
<tr>
<td>Substances determined to be non-hazardous</td>
<td>-</td>
<td>Balance</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

INHALATION
- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT
- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

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- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

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- Handle containers with care. Open slowly in order to control possible pressure release.
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- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.
- Store in cool, dry and well-ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS
## Substances

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA</th>
<th></th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>ppm</td>
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<td>ppm</td>
<td>mg/m³</td>
</tr>
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<td>188.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resin</td>
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<td>-</td>
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<td>100</td>
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<td>-</td>
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<td>-</td>
<td>0.00</td>
<td>-</td>
<td>-</td>
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<td>67.50</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

## Appropriate Engineering Control Measures
- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

## Personal Protection

**Respiratory Protection:** Use of NIOSH - approved respirators with organic vapour cartridges is recommended.

**Hand Protection:** Use of solvent resistance type or chemical resistant type of protective gloves is recommended.

**Eye Protection:** Use of safety glasses or goggles with side shields is recommended.

**Skin / Body Protection:** Wear chemical resistant clothes and safety shoes when handling product.

## 9. Physical and Chemical Properties

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<tr>
<th>Property</th>
<th>Value</th>
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<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>0.9 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 230 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>83 - 87 KU</td>
</tr>
</tbody>
</table>

## 10. Stability and Reactivity

### Reactivity
No dangerous reaction known under condition of normal use.

CHEMICAL STABILITY
- The product is stable under recommended storage and handling conditions. (see section 7)

POSSIBILITY OF HAZARDOUS REACTION
- Under normal conditions of storage and use, hazardous reaction will not occur.

CONDITIONS TO AVOID
- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS
- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.
Toxicological information of substances:

**Acute oral toxicity**
Harmful if swallowed

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>5580</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>1300</td>
</tr>
<tr>
<td>Resin</td>
<td>5000</td>
</tr>
<tr>
<td>Xylene</td>
<td>4300</td>
</tr>
<tr>
<td>Bisphenol-A type solid epoxy resin</td>
<td>2001</td>
</tr>
<tr>
<td>Strontium chromate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>5660</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>12196</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>2000</td>
</tr>
<tr>
<td>Resin</td>
<td>3000</td>
</tr>
<tr>
<td>Xylene</td>
<td>1700</td>
</tr>
<tr>
<td>Bisphenol-A type solid epoxy resin</td>
<td>2001</td>
</tr>
<tr>
<td>Strontium chromate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Diethylene glycol monobutyl ether</td>
<td>2700</td>
</tr>
</tbody>
</table>

**Acute inhalation toxicity**
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>28800</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>Data not available</td>
</tr>
<tr>
<td>Resin</td>
<td>Data not available</td>
</tr>
</tbody>
</table>
Substances | Inhalation Vapor LC50 (Rat), mg/L/4hr  
---|---  
Xylene | 5000  
Bisphenol-A type solid epoxy resin | Data not available  
Strontium chromate | Data not available  
Diethylene glycol monobutyl ether | Data not available

**Skin corrosion or irritation**  
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.

**Serious eye damage or irritation**  
May be an eye irritant

**Respiratory or skin sensitisation**  
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

**Germ cell mutagenicity**  
No information available on the product

**Carcinogenicity**  
Titanium Dioxide  
The International Agency for Research on Cancer (IARC) has classified Titanium Dioxide as possibly carcinogenic to humans (Group 2B) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals

**Reproductive toxicity**  
No information available on the product

**Specific Target Organ Toxicity (STOT)-single exposure**  
No information available on the product

**Specific Target Organ Toxicity (STOT)-repeated exposure**  
No information available on the product

**Asphyxiation hazard**  
May be harmful if swallowed and enters airways

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**12. ECOLOGICAL INFORMATION**

**Toxicity**  
Aquatic toxicity - No data available

**Persistence and degradability**  
Biodegradation - No data available

**Bioaccumulative potential**  
No data available

**Mobility in soil**  
No data available

**Result of PBT and vPvB assessment**  
No data available
Other adverse effects
There is no ecotoxicological test data available on the product itself.
The product should not be allowed to enter drains or water courses.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor.
All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT

Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II

SEA TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea.
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II
Marine Pollutant: No

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)

Not applicable

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air
UN Number: 1263
Proper shipping name: PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION
Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

### 16. OTHER INFORMATION

Revision Date/Version No.: 13-09-2017 /3/3.1.1

History
Previous Revision Date /Version No.: 09-03-2017 /3/2.1.1

Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IARC International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.