



SAFETY DATA SHEET

SDS Number: SDS-70912

Version No: 003

Revision Date/Version No:22-06-2023 /3/1.1.1

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

Product Name:	HI-DRO 63-01 HARDENER
Intended Use:	Water-Based Protective Coating
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

Not classified as a physical hazard under GHS criteria

Health Hazard

Skin corrosion/irritation	Category 2
Serious eye damage/irritation	Category 1

Environmental Hazard

Not classified as an environmental hazard under GHS criteria

GHS Pictogram



Signal Word

Danger

Hazard statements

H315: Causes skin irritation

H318: Causes serious eye damage

Precautionary statements

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/protective clothing/eye protection/face protection

Response

P310: Immediately call a POISON CENTER or doctor/physician

P321: Specific treatment (see Section 4 of SDS)

P362: Take off contaminated clothing and wash before reuse

P302+352: IF ON SKIN: Wash with soap and water

P332+313: If skin irritation occurs: Get medical advice/attention

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

None

Disposal

None

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances	CAS No.	%
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with ethylenediamine, polymers with 2,2'-[1,4-cyclohexanediylbis(methyleneoxymethylene)]bis[oxirane] and polyethylene glycol diglycidyl ether, reaction products with 2-[(2-methylphenoxy)methyl]oxirane	2294906-60-6	17-37
Substances determined to be non-hazardous	-	Balance
		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.
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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

Substances	ACGIH TLV-TWA		OSHA PEL-TWA	
	ppm	mg/m3	ppm	mg/m3
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with ethylenediamine, polymers with 2,2'-[1,4-cyclohexanediy]bis(methyleneoxymethylene)]bis[oxirane] and polyethylene glycol diglycidyl ether, reaction products with 2-[(2-methylphenoxy)methyl]oxirane	-	-	-	-

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: Based on the local regulation, risk assessment of hazards and potential exposure, use of NIOSH - approved respirators if necessary.

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	: Mild paint odour
Odour threshold	: Not available
pH	: 8-10
Melting point/freezing point	: Not available
Initial boiling point and boiling range	: Not available
Flash point	: Not available
Evaporation rate	: Not available
Flammability (solid, gas)	: Not applicable
Lower flammability or explosive limit	: Not available
Upper flammability or explosive limit	: Not available
Vapour pressure	: Not available
Vapour density	: Not available
Relative density	: Not available
Solubility	: Miscible in water
Partition coefficient	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available

Viscosity : Not available

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

Substances

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with ethylenediamine, polymers with 2,2'-[1,4-cyclohexanediylbis(methyleneoxymethylene)]bis[oxirane] and polyethylene glycol diglycidyl ether, reaction products with 2-[(2-methylphenoxy)methyl]oxirane

Oral LD50(Rat), mg/kg

Data not available

Acute dermal/skin toxicity

May be harmful if in contact with skin

Substances

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with ethylenediamine, polymers with 2,2'-[1,4-cyclohexanediylbis(methyleneoxymethylene)]bis[oxirane] and polyethylene glycol diglycidyl ether, reaction products with 2-[(2-methylphenoxy)methyl]oxirane

Dermal LD50 (Rabbit), mg/kg

Data not available

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.

Substances

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with ethylenediamine, polymers with 2,2'-[1,4-cyclohexanediylbis(methyleneoxymethylene)]bis[oxirane] and polyethylene glycol diglycidyl ether, reaction products with 2-[(2-methylphenoxy)methyl]oxirane

Inhalation Vapor LC50 (Rat), mg/L/4hr

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

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: 3066
 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: 8
 Subsidiary Risk(s): -
 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: 3066
 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: 8
 Subsidiary Risk(s): -
 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: 3066
 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: 8
 Subsidiary Risk(s): -
 Packaging Group: II

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
 - SS 586: Part 1: 2021-Transport and storage of dangerous goods
 - SS 586: Part 2: 2014-GHS of classification and labelling of chemicals
 - SS 586: Part 3: 2008(2014)-Preparation of safety data sheet
- 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 not 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.: 22-06-2023 /3/1.1.1

History

Previous Revision Date /Version No.: not applicable //

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

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