

MATERIAL SAFETY DATA SHEET

Hardener (HCR)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name : Hardener (HCR)
 Product Use : Hardener for TN 9000,cold bonding adhesive
 Manufacturer's Address : Thejo Engineering Ltd
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2. COMPOSITION / INFORMATION ON INGREDIENTS

Polyisocyanate solution in Ethyl Acetate

Chemical Name	CAS Number	%Range
Ethyl Acetate	141-78-6	>70%
Polyisocyanate	4083-64-1	>5%

3. HAZARD IDENTIFICATION

	GHS Classification	Hazardous statement
Flammable Liquids	Category 2	H225
Acute toxicity, dermal	Category 5	H313
Acute toxicity, inhalation	Category 5	H333
Skin corrosion/irritation	Category 2	H315
Eye irritation	Category 2A	H319
Specific target organ toxicity – Single exposure	Category 3	H335
Aspiration hazard	Category 1	H304
Acute aquatic toxicity	Category 1	H400

Signal word: DANGER

GHS Labeling

Hazard pictograms (CLP):



GHS02

GHS07

GHS08

GHS09

Human Health Hazards

Inhalation:	May be irritating to respiratory tract. Exposure to high concentration may result in headache, loss of coordination, vomiting, wheezing and coughing.
Skin Contact:	Mildly irritating to skin. May be harmful if absorbed through skin
Eyes:	Prolonged or repeated eye contact may result in corneal clouding.
Ingestion:	Exposure to high concentration may result in nausea, vomiting, diarrhoea and dizziness

4. FIRST AID MEASURES

Inhalation:	Remove the victim to fresh air. Monitor respiratory function. If there is breathing difficulty, provide oxygen. If necessary, give artificial respiration.
Skin contact:	Remove contaminated clothing and shoes. Wash affected area with plenty of water for at least 15 minutes. Wash contaminated clothing and shoes before reuse.
Eye contact:	Wash immediately with running water for at least 15 minutes, keeping the eyelids open, remove contact lenses if present
Ingestion:	Rinse mouth of victim with water. Give plenty of water to drink. DO NOT INDUCE VOMITING.

Seek medical attention. If irritation persists even after the first aid in any of the above case obtain immediate medical advice

5. FIRE FIGHTING MEASURES

Extinguishing media:	CO ₂ , foam, dry chemicals
Protection of fire-fighters:	Use full protective clothing. Self contained breathing apparatus
Combustion products:	A complex mixture of airborne solids, liquids, gases including carbon monoxide, carbon dioxide and other organic compounds

6. ACCIDENTAL RELEASE MEASURES

Personal precautionary measures:	Wear appropriate protective equipments
Environmental precautionary measures:	Prevent entry to sewers or streams, dike if needed. Prevent contamination of soil. Consult local authorities.
Procedure for clean Up:	Clear all personnel from that area- Keep away from sources of ignition - No smoking. Prevent contamination of waterways. Absorb with an inert dry material and place in an appropriate waste disposal container.

7. HANDLING AND STORAGE

Handling:	Flammable. For Industrial Use Only. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid inhalation of chemical. DO NOT handle or store near an open flame, heat, or other sources of ignition. DO NOT pressurize, cut, heat or weld containers. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personal protective equipment. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≥ 10 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Extinguish any naked flames.
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Storage: Store in a cool dry place below 20°C away from direct sunlight and exposure to moisture or water.

Keep tightly sealed when not in use.

Suitable Packing materials: Keep in steel containers, glass containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures: Local exhaust recommended. Explosion protected electrical equipment. Take precautionary measures against static discharges.

Respiratory protection: Use an appropriate NIOSH approved respirator

Gloves: Impervious gloves. Butyl rubber gloves. Silver Shield(R).

Skin protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential.

Eyes: Chemical goggles; also wear a face shield if splashing hazard exists.

Hygienic measures: When using do not eat, drink or smoke. Wash hands after working with the substance.

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

1. Appearance	Liquid
2. Color	Yellowish green to dark violet
3. Density	0.96 +/- .05 @ 25°C
4. Viscosity	12 Seconds at 25°C in Ford Cup Method
5. Shelf life	12 months, if stored below 20°C
6. Flash point	-4°C
7. Boiling point	78-82°C

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions

Hazardous Polymerization: Will not occur

Conditions to Avoid: Direct sparks, flames and other sources of ignition. Do not puncture or incinerate containers

Materials to Avoid: Reacts with strong acids, strong bases, alcohols, amines and water.

Hazardous decomposition products: Thermal breakdown may produce carbon oxides and traces of incompletely burned carbon compounds.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: This product may be irritating to the eyes, skin, and respiratory system. This product may cause sensitization in previously exposed individuals and result in contact dermatitis. This product may be absorbed through the skin. Acute inhalation may cause central nervous system depression with drowsiness, dizziness, headache, nausea, vomiting, unconsciousness and coma. Death may occur from respiratory arrest or ventricular fibrillation resulting in primary cardiac failure. Liver and kidney damage may also occur.

Chronic toxicity: Prolonged or repeated liquid contact can result in de-fatting and drying of the skin, which may result in skin irritation and dermatitis. Sensitization may occur. Repeated exposure to the eyes may cause conjunctivitis.

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12. ECOLOGICAL INFORMATION

General: Toxic with aquatic life with long lasting effect

13. DISPOSAL CONSIDERATION

Waste disposal recommendations: Waste should be disposed as hazardous waste according to local regulations.

Waste treatment methods: Treatment should be carried out as established for the product, recommending routes of co-processing in cement kilns and incineration.

14. TRANSPORT INFORMATION

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

Proper Shipping Name : Ethyl Acetate
UN Number : 1173
Class : 3
Packaging Group : II

15. REGULATORY INFORMATIONS

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Other regulations, limitations and prohibitive regulations

VOC (EU) in %: 70.00 %

VOC (EU) in g/l: 700.0 g/l

Chemical safety assessment: A Chemical Safety Assessment has been carried out.

HIMS RATINGS: HEALTH 1; FIRE 3; REACTIVITY 0

NFPA RATINGS: HEALTH 1; FIRE 3; REACTIVITY 0

16. OTHER INFORMATION

All employees or contractors etc. who use this product must have access to this Safety Data Sheet.

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History of revision : msds updated to comply with GHS regulations. Replaces MSDS dated March 30, 2014.

Prepared by : Thejo engineering ltd