

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name : Hardener (HC)
 Product Use : Hardener for TC 310,TC 310-M & TN 2800 Cold bonding adhesives
 Manufacturer's Address : Thejo Engineering Ltd
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CHILE

2. COMPOSITION / INFORMATION ON INGREDIENTS

Polyisocyanate solution dispersed in dichloromethane (Methylene Chloride)

Chemical Name	CAS Number	%Range
Methylene Chloride	75-09-02	>65%
Polyisocyanate	4083-64-1	>5%

3. HAZARD IDENTIFICATION

	GHS Classification	Hazardous statement
Flammable Liquids	Not Classified	
Acute toxicity, dermal	Category 5	H313
Acute toxicity, inhalation	Category 2	H373
Skin corrosion/irritation	Category 2	H315
Eye irritation	Category 2A	H319
Specific target organ toxicity – Single exposure	Category 3	H335
Carcinogenicity	Category 2	H351
Acute aquatic toxicity	Category 1	H400
Signal word: DANGER		

GHS Labeling

Hazard pictograms (CLP):



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Human Health Hazards

Inhalation:	Causes irritation to respiratory tract. Has a strong narcotic effect with symptoms of mental confusion, light-headedness, fatigue, nausea, vomiting and headache. Causes formation of carbon monoxide in blood which affects cardiovascular system and central nervous system. Continued exposure may cause increased light-headedness, staggering, unconsciousness, and even death.
Skin Contact:	Causes irritation, redness and pain. Prolonged contact can cause burns. Liquid degreases the skin. May be absorbed through skin.
Eye Contact:	Vapors can cause eye irritation. Contact can produce pain, inflammation and temporal eye damage.
Ingestion:	May cause irritation of the gastrointestinal tract with vomiting. If vomiting results in aspiration, chemical pneumonia could follow. Absorption through gastrointestinal tract may produce symptoms of central nervous system depression ranging from light headedness to unconsciousness.
Chronic Exposure:	Can cause headache, mental confusion, depression, liver effects, kidney effects, bronchitis, loss of appetite, nausea, lack of balance, and visual disturbances. Can cause dermatitis upon prolonged skin contact. Methylene chloride may cause cancer in humans.

4. FIRST AID MEASURES

Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin Contact:	Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Ingestion:	If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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

Combustible at high temperature only, Auto-Ignition temperature reported at 556°C

Extinguishing media:	CO ₂ , foam, dry chemicals
Protection of fire-fighters:	Use full protective clothing. Self contained breathing apparatus Forbidden extinguishers: DO NOT USE WATER EXTINGUISHERS.
Combustion products:	Halogenated compounds, oxides of carbon, phosgene
Combustion risks:	During combustion the preparation may release toxic or highly toxic gases. Avoid inhaling the fumes. Protective equipment: Use protection for the airways. Cool the containers exposed to the fire with water.

6. MEASURES IN CASE OF ACCIDENTAL RELEASE

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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: Avoid contact and inhalation of the vapors. Do not eat or drink while working. Do not smoke while working. Keep away from water or from damp surroundings.

Storage conditions: Keep this product in a dry place below 20°C. Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight. Keep away from flame and sparks. Avoid accumulating electrostatic charge. Instructions as regards storage premises: Cool and adequately ventilated.

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 PROPERTIES

1. Physical State	Liquid
2. Color	Gray to Purple
3. Density	1.24 +/- 0.05 at 25°C
4. Shelf Life	12 months ,if stored below 20°C in original unopened factory packing
5. Viscosity	0.10 Sec at 25°C in Ford Cup Method
6. Flash Point	No flash, burn on fire above 100°C, cannot sustain combustion its own.
7. Boiling point	39-41°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: Halogenated compounds, oxides of carbon, phosgene

Caution : Keep tightly sealed.

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11. DISPOSAL CONSIDERATION

Methods of disposal according to the local legislation. Through incineration; dangerous pressure build ups may occur in closed Container Combustion in an incinerator for chemical waste.

12. 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: CARCINOGENIC EFFECTS: Classified + (Proven.) by OSHA. Classified 2B (Possible for human.) by IARC. Causes damage to the following organs: lungs, the nervous system, liver, mucous membranes, central nervous system (CNS).

13. ECOLOGICAL INFORMATION

General: Toxic with aquatic life with long lasting effect

14. TRANSPORT INFORMATION

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

PROPER SHIPPING NAME : Dichloromethane
HAZARD CLASS : 6.1
UN NUMBER : 1593
PACKING GROUP : III

15. REGULATORY INFORMATION

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

National regulations

Other regulations, limitations and prohibitive regulations

VOC (EU) in %: 65.00 %

VOC (EU) in g/l: 650.0 g/l

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

HIMS RATINGS: HEALTH 2; FIRE 1; REACTIVITY 0

NFPA RATINGS: HEALTH 2; FIRE 1; 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 revision : msds updated to comply with GHS regulations. Replaces MSDS dated March 30, 2014.

Prepared by : Thejo engineering ltd.