

# SAFETY DATA SHEET

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: POLYURETHANE INSULATION VARNISH  
TRADE NAME: C-5 ( THINNER )  
MANUFACTURER/SUPPLIER: TONG HSIEH CHEMICAL INDUSTRIAL CO., LTD.  
COMPANY/PLANT: NO. 346, HO-HSING ROAD, CHUNAN IND. PARK,  
CHUNAN 35046, MIAO-LI HSIEN,  
TAIWAN  
TEL. +886-37-584191~3, FAX. +886-37-584383  
<http://www.thsci.com.tw>

## SECTION 2. HAZARDS IDENTIFICATION

GHS-Pictogram



Signal Word : Danger

Hazard Categories / Classes :

flammable liquids :	Category 3
Acute toxicity (Oral) :	Category 4
Skin corrosion/Irritation :	Category 2
Serious eye damage / eye irritation :	Category 1
Specific target organ systemic toxicity-repeated exposure :	Category 2
Hazardous to the aquatic environment (Acute toxicity) :	Category 3
Aspiration hazard :	Category 1

Hazard Statements :

- Flammable liquid and vapor.
- Harmful if swallowed.
- Cause skin irritation.
- Cause severe eye injury.
- Prolonged or repeated exposure may result injury of organs.
- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- May be fatal if swallowed and into respiratory tract.

# SAFETY DATA SHEET

Precautionary statements :

Store container in a well-ventilated place.

Light cigarettes or any other ignition sources should not be allowed around storage area.

Store away from strong oxidizers and strong acids.

Avoid contact with eyes.

Wear protective clothing / protective gloves / safety glasses / face protective gears.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazards Composition

Components	CAS NO.	Concentration % (w/w)
Cresol (mixture)	1319-77-3	60
Xylene (mixture)	1330-20-7	40

## SECTION 4. FIRST AID MEASURES

General information : Instantly remove any clothing soiled by the product in case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation : Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice.  
Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.  
Obtain medical attention.

After skin contact : Avoid direct contact. Wear chemical protective clothing, if necessary.  
Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes.  
If irritation persists, repeat flushing and get medical attention.

After eye contact : Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20-30 minutes.  
If irritation persists, repeat flushing.  
Quickly transport victim to an emergency care facility.

After swallowing : Never give anything by mouth if victim is rapidly losing consciousness.  
Have victim rinse mouth thoroughly with water.  
Do not induce vomiting.  
Have victim drink 240 to 300 ml of water to dilute material in stomach.  
Obtain medical attention immediately.

First aid comments : Provide general supportive measures (comfort, warmth, rest).  
Consult a doctor for all exposures except minor instances of inhalation or skin contact.

# SAFETY DATA SHEET

## SECTION 5. FIRE FIGHTING MEASURES

- Extinguishing media : Carbon dioxide, dry chemical powder, foam, water spray or fog. Solid streams of water may be ineffective and spread material.
- Fire fighting instructions : Evacuate area and fight fire from a safe distance or protected location. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. If possible, isolate materials not yet involved in the fire, and move containers from the fire area if this can be done without risk. Otherwise, fire-exposed containers should be cooled by application of hose streams. Take care not to get water inside container. Cooling should continue until well after the fire is out. If this is not possible, use unmanned monitor nozzles and immediately evacuate the area.
- Protection of fire fighters : Cresol is corrosive to skin. Do not enter without wearing specialized equipment. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection, chemical protective clothing (e.g. chemical splash suit) and positive pressure self-contained breathing apparatus may be necessary.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Spill precautions : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Wear adequate personal protective equipment. Extinguish or remove all ignition sources.
- Clean-up : Stop or reduce leak if safe to do so. Contain spill with earth, sand or absorbent material which does not react with spilled material. Prevent spilled material from entering waterways, sewers or confined space.
- Small spills : Soak up spill with absorbent material which does not react with spilled chemical. Put material in suitable, covered, labelled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product.
- Large spills : Contact fire and emergency services and supplier for advice.

# SAFETY DATA SHEET

## SECTION 7. HANDLING AND STORAGE

Handling :

1. Inspect all incoming containers to make sure they are properly labelled and not damaged.
2. Before handling, it is important that engineering controls are operating and that protective equipment requirements are being followed.
3. Keep away from heat. Post NO SMOKING signs.
4. Electrically ground all drums, transfer vessels, hose and piping.
5. Unprotected persons should avoid all contact with this product including contaminated equipment. Avoid generating vapors or mists.
6. Practice good housekeeping. Maintain handling equipment. Comply with applicable regulations.

Storage :

1. Keep containers closed when not in use.
2. Store in a cool, well-ventilated area out of direct sunlight and away from heat and ignitions sources.
3. Store away from oxidizers and corrosives and other incompatible materials.
4. Keep storage areas clear of any ignition source.
5. Keep quantities stored as small as possible.
6. Consider leak detection and alarm equipment for storage area.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls : Use local exhaust ventilation to control airborne mist and vapor (if heated). Supply sufficient replacement air to make up for air removed by exhaust systems. It is good practice to use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical system in area of use.

Personal protective equipment : If engineering controls and work practices are not effective in controlling exposure to this product, then wear suitable personal protective equipment. Have appropriate equipment available for use in emergencies such as spills or fire.

Respiratory protective guidelines : NIOSH RECOMMENDATIONS FOR CRESOL (m-,o-,p-)

Up to 23ppm : Chemical cartridge respirator with organic vapor cartridge(s) and dust and mist filter(s).

Up to 57.5ppm : SAR (supplied-air respirator) or PAPR (powered air-purifying respirator with organic vapor cartridge(s) and dust and mist filter(s).)

Up to 250ppm : Positive pressure, full-facepiece SAR.

NIOSH RECOMMENDATIONS FOR XYLENE (m-,o-,p-)

# SAFETY DATA SHEET

Up to 900ppm : Chemical cartridge respirator with organic vapor cartridge(s), or PAPR with organic vapor cartridge(s), or full-facepiece SAR with an auxiliary positive pressure self-contained breathing apparatus.

Eye / Face protection : Chemical safety goggles.

Skin protection : Chemical protective gloves, coveralls, boots, and / or other chemical protective clothing to prevent all skin contact.

Permissible exposure limits (PELs)

Time-weighted Average (PEL-TWA)

Cresol : 5 ppm (22mg/m<sup>3</sup>), Xylene : 100ppm (435mg/m<sup>3</sup>)

Personal hygiene : Do not eat, drink and smoke in work areas. Wash hands thoroughly after handling this material. Maintain good housekeeping.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light brown viscous liquid
Flash point:	45-55 °C
Flammability:	Flammable
UEL:	Not Determined
LEL:	1.0 % (v/v)
Auto ignition temperature:	>450 °C
PH:	ca. 4-5
Vapor Pressure:	1~9 mmHg at 17 °C
Vapor Density:	ca. 3.7 (Air=1)
Boiling Point:	ca. >135 °C
Melting Point:	--
Solubility in Water:	ca. 5 % (w/w) at 100 °C
Specific Gravity:	ca. 1.0-1.13 at 20 °C (Water=1)
Evaporation Rate	Xylene, Approximate 0.7 (n-butyl acetate=1) Cresol, very low.
Coefficient of oil / water distribution :	Log P(oct)=1.95 (cresol), 3.12-3.20 (xylene)

## SECTION 10. STABILITY AND REACTIVITY

Stability : Normally stable. Cresol (mixed isomers) darkens with age or on exposure to air and light as a result of slow oxidation.

Conditions to Avoid : Heat, sparks, open flames, static discharge, other ignition sources.

Materials to Avoid : Strong acid and strong oxidizing agents.

Hazardous Decomposition Products : None reported.

# SAFETY DATA SHEET

## SECTION 11. TOXICOLOGICAL INFORMATION

### Cresol :

- LD<sub>50</sub> (oral, rat) : 1454 mg / kg (mixed o-,m- and p-cresol in corn oil)
- LD<sub>50</sub> (oral, mouse) : 561 mg / kg (mixed o-,m- and p-cresol in corn oil)
- LD<sub>50</sub> (dermal,rabbit) : 1782mg / kg (mixed o-,m- and p-cresol , undiluted.)
- Eye irritation : Extreme irritation has been observed in rabbits.
- Skin irritation : Corrosive injury has been observed in rabbits.
- Skin sensitization : The available information dose not suggest that cresols are skin sensitizers.
- Carcinogenicity : No cancer studies have been conducted.
- Effects of long-term (chronic) exposure : m- and p- cresol in food produced signs of decreased liver function in male rats exposed to 1800 mg / kg / day and female rats exposed to 750 and 1500 mg / kg / day for 13 weeks.

### Xylene :

- LC<sub>50</sub> ( rat ) : 6350 ppm (4hrs exposure) (unspecified isomers and ethylbenzene)
- LD<sub>50</sub> (oral, female mouse) : 5251 mg / kg  
(60.2% m- ,9.1% o- , 14.6% p- , 17.0% ethylbenzene)
- LD<sub>50</sub> (dermal, rabbit) : 12180 mg / kg (m- xylene)
- Eye irritation : Xylene is a very mild eye irritant.
- Skin irritation : Xylene is a moderate skin irritant.
- Carcinogenicity : The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for carcinogenicity in animals.
- Fetotoxicity : Mixed xylenes are considered fetotoxic.
- Effects of long-term (chronic) exposure : In general, animal studies have provided little evidence of damage to the liver, kidney or lings. Some studies has shown reversible blood effects at concentrations above 1000 ppm, However, xylene has not shown to cause benzene-like cancer of the blood.

## SECTION 12. ECOLOGICAL INFORMATION

### Biodegradability

The biodegradability of most content of cresol and xylene are good. Xylene has been verified to show excellent biodegradability by MITT's examination of existing chemical substances.

# SAFETY DATA SHEET

## Fish toxicity

TLm of Cresol for various fish (24, 96 hrs) 10~50 mg/L

TLm of Xylene for various fish (24, 96 hrs) 10~40 mg/L

LC<sub>50</sub> of Xylene 13.0 mg/L 24 hrs (Goldfish)  
13.5 mg/L 96 hrs (Rainbow trout)

## Others

Octanol/Water partition coefficient

Log Kow 2.8~3.2 for Xylene

## **SECTION 13. DISPOSAL CONSIDERATIONS**

Review national and local government requirements prior to disposal, store material for disposal as indicated in storage conditions. Disposal by controlled incineration or secure landfill may be acceptable.

## **SECTION 14. TRANSPORTATION INFORMATION**

UN Number : 1992

Shipping name and Description : Varnish, liquid

Label : 3, 6, 1 (Flammable liquids, Toxic substances)

Packing Group : III

## **SECTION 15. REGULATORY INFORMATION**

Applicable regulations :

Recommended guidelines, rules and standards for chemical safety handling, storage, transportation, loading / unloading hazard, classification and labeling, need to refer the regulations below :

Rules of Label and Hazard Communication for Dangerous and Harmful Materials

Airbone Permissible Exposure Concentration of Harmful Materials at the Labor Work Environment

Labor Safety and Health Law

Labor Safety and Health Law Enforcement Rules

Toxic Chemical Substances Management Regulations

Toxic Chemical Substances Transportation Management Regulations

Toxic Chemical Substances Management Regulations Enforcement Rules

# SAFETY DATA SHEET

Rules for Road Traffic Safety

Fire Services Act

## SECTION 16. OTHER INFORMATION

References :

- 1).The SDS of Chinese Petroleum Corporation, Taiwan
- 2).The database of SDS of Council of Labor Affairs, Executive Yuan, Taiwan
- 3). K, Verschueren : Handbook of Environmental Data on Organic Chemicals, (Second Edition 1983)
- 4).CHEMINFO, CCOHS, Cresol and Xylene, 2008
- 5).RTECS : Cresol and Xylene, 2008

Prepared by :

Lin, Chin-Chih Manager

TONG HSIEH CHEMICAL INDUSTRIAL CO., LTD.

NO. 346, HO-HSING ROAD, CHUNAN IND. PARK,  
CHUNAN 35046, MIAO-LI HSIEN,  
TAIWAN, R.O.C.

Tel. +886-37-584191~3 , Fax. +886-37-584383

## ADDITIONAL COMMENTS

This material is for industrial use only. The information contained herein is based on current knowledge and experience and is offered to you in good faith as accurate. Although all reasonable efforts were exercised in preparing this SDS but we cannot guarantee its accuracy or completeness. No responsibility is accepted that the information is sufficient or correct in all cases. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and to use this product safely and properly to comply with all applicable laws and regulations and the protection of the environment.