

Material Safety Data Sheet Triclocarban

Section 1: Chemical Product and Company Identification

Product Name : Triclocarban
Chemical Formula : $C_{13}H_9Cl_3N_2O$
Company Identification : Tradeasia International Pte Ltd
Email : contact@chemtradeasia.com

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS#	% by Weight
3,4,4'-trichlorocarbanilide	101-20-2	>98

Section 3: Hazards Identification

EMERGENCY OVERVIEW RISK

Limited evidence of a carcinogenic effect. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS ACUTE HEALTH EFFECTS SWALLOWED

Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ

EYE

Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Open cuts, abraded or irritated skin should not be exposed to this material.

Entry into the bloodstream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and

remaining in the lung. Triclocarban causes an alteration in gene expression in human cells that is normally seen with exposure to testosterone. In rats, exposure caused abnormally enlarged prostate glands. This is the first time an endocrine disruptor has been shown to increase the effects of hormones rather than blocking or damping their activity.

Section 4: First Aid Measures

SWALLOWED

Immediately give a glass of water. " First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE

If this product comes in contact with eyes: " Wash out immediately with water. " If irritation continues, seek medical attention.

SKIN

If skin or hair contact occurs: " Flush skin and hair with running water (and soap if available). " Seek medical attention in event of irritation.

INHALED

If dust is inhaled, remove from contaminated area. " Encourage patient to blow nose to ensure clear passage of breathing. " If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

Treat symptomatically

Section 5: Fire and Explosion Data

Vapour Pressure (mmHG): Negligible

Upper Explosive Limit (%): Not available

Specific Gravity (water=1): Not available

Lower Explosive Limit (%): Not available

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited. Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), hydrogen chloride, phosgene, nitrogen oxides (NO_x), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

- Glasses.
- Chemical goggles.
- Gloves.
- Respirator.
- Particulate.

Section 6: Accidental Release Measures

MINOR SPILLS

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal. Environmental hazard - contain spillage.

MAJOR SPILLS

- Environmental hazard - contain spillage.
- Moderate hazard.
- CAUTION: Advice personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7: Handling and Storage

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs. Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS

- Observe manufacturer's storing and handling recommendations.

Section 8: Exposure Controls/Personal Protection

Personal Protection:

- **RESPIRATOR**

- Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
- **EYE**
 - Safety glasses with side shields
 - Chemical goggles.
- **HANDS/FEET**
 - Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: frequency and duration of contact, chemical resistance of glove material, glove thickness and dexterity
 - Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
 - When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
 - When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
 - Contaminated gloves should be replaced. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. " polychloroprene " nitrile rubber " butyl rubber " fluorocautchouc " polyvinyl chloride Gloves should be examined for wear and/ or degradation constantly.
- **OTHER**
 - Overalls.
 - P.V.C. apron.
 - Barrier cream.
 - Skin cleansing cream.
 - Eye wash unit.
- **ENGINEERING CONTROLS**
 - Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
 - Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9: Physical and Chemical Properties

Physical state and appearance	: Solid.
Odor	: Odourless.
Taste	: Not available.
Molecular Weight	: 315.59 g/mole
Color	: Colorless.
pH (1% soln./water)	: Not applicable.

Boiling Point	: Not available.
Melting Point	: 491.2 - 493°F
Critical Temperature	: Not available.
Specific Gravity	: Not available.
Vapor Pressure	: Negligible.
Vapor Density	: > 1 (Air = 1)
Volatility	: Not applicable.
Odor Threshold	: Not applicable.
Water/Oil Dist. Coeff.	: Not available.
Ionicity (in Water)	: Not available.
Dispersion Properties	: See solubility in water, acetone, propylene glycol.
Solubility	: Partly miscible in water. Soluble in acetone (1:25), propylene glycol (1:100).

Section 10: Stability and Reactivity Data

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Avoid strong bases.
- Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage

Section 11: Toxicological Information

TOXICITY AND IRRITATION

3,4,4'-TRICHLOROCARBANILIDE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: >34600 mg/kg

Dermal (rabbit) LD50: >7940 mg/kg * * [Sigma/Aldrich]

Intraperitoneal (mouse) LD50: 2100 mg/kg

IRRITATION

Nil Reported

For 3,4,4'-trichlorocarbaniide (TCC)

Repeat dose toxicity: The feeding of TCC to rats at a daily level of 1000 mg/kg bw, five days per week for thirty days, was not detrimental insofar as could be determined by food consumption, growth data, and tissue examination.

TCC was neither a primary irritant, a fatiguing agent, nor a sensitiser to any of the 50 human volunteers. Fifty (50) mg of substance was applied to the gauze portion of patches that were applied to the back of 50 subjects for 24 hours and repeated for 15 applications (with 24 hour rest periods between each repeat application). After a 2 week rest period, a challenge application of 50mg was applied to the same site of each subject for a 24 hour exposure period.

Genotoxicity: The results of the Ames test indicate that under the condition of these studies, TCC did not show any evidence of mutagenic potential in any of the tester strains in the presence or absence

of Arochlor-induced rat S9 liver microsomes. Further in in vitro chromosomal aberration studies TCC was shown have study results indicate that the compound has no clastogenic potential.

Carcinogenicity: according to EPA OTS 798.3320 guideline. TCC was administered ad libitum at doses calculated to be 25, 75, and 250 mg/kg body weight.

No evidence of a dose related increase in tumor incidence at any site.

No statistically significant difference in tumor incidence between controls and high dose animals (except for a significant reduction in incidence of fibroadenomas and papillary carcinomas in high dose females).

Reproductive and Developmental Toxicity : A study was conducted to determine the reproductive and teratogenic potential of TCC in rats in a three generation oral feeding study. No treatment-related effect was evident on mortality or physical in-life evaluations. Body weight and food consumption were not adversely affected by treatment throughout the study. Mating indices and male fertility were not adversely affected by treatment for all generations. Pregnancy rates were comparable to controls for dose groups 250 -1000 ppm. The pregnancy rate was unusually low for the high dose group (3000 ppm) during the second litter interval of the F1 generation only. The Reproductive No Observed Adverse Effect Level (NOAEL) for Parental and F2 generations = 3000 ppm; NOAEL for the F1 generation = 1000 ppm. No treatment-related effects were seen on any pups from all generations (including dead pups). Litter viability and survival rates were comparable to controls. The NOAEL for teratogenicity was greater than 3000 ppm.

Section 12: Ecological Information

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

Refer to special instructions/ safety data sheets.

Section 13: Disposal Considerations

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory.

Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.

- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14: Transport Information

DOT:

Symbols: G Hazard class or Division: 9

Identification Numbers: UN3077 PG: III

Label Codes: 9 Special provisions: 8, 146, 335, B54, IB8, IP3, N20, T1, TP33

Packaging: Exceptions: 155 Packaging: Non- bulk: 213

Packaging: Exceptions: 155

Quantity limitations: No limit Passenger aircraft/rail: Quantity Limitations: Cargo No limit Vessel stowage: Location: A

aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Environmentally hazardous substance, solid, n.o.s

Air Transport IATA: UN/ID Number: 3077 Packing Group: III

Special provisions: A97

Cargo Only

Packing Instructions: 956 Maximum Qty/Pack: 400 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: Y956 Maximum Qty/Pack: 400 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: 956 Maximum Qty/Pack: 30 kg G

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. *(CONTAINS 3,4,4'-TRICHLOROCARBANILIDE)

Maritime Transport IMDG:

IMDG Class: 9 IMDG Subrisk: None

UN Number: 3077 Packing Group: III

EMS Number: F-A,S-F Special provisions: 274 335

Limited Quantities: 5 kg Marine Pollutant: Yes

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(contains 3,4,4'-trichlorocarbaniide)

Section 15: Other Regulatory Information

3,4,4'-trichlorocarbaniide (CAS: 101-20-2) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)", "OSPAR List of Substances of Possible Concern", "US - Maine Chemicals of High Concern List", "US EPA High Production Volume Program Chemical List", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

Section 16: Other Information

LIMITED EVIDENCE

- May possibly be harmful to the foetus/ embryo*
*(limited evidence).

Denmark Advisory list for selfclassification of dangerous substances

Substance CAS Suggested codes 3, 4, 4' - trichlorocarbanilide 101- 20- 2 N; R50/53

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