



Material Safety Data Sheet

TRIS-2-CHLOROETHYL PHOSPHITE

Date Prepared: 3/03/08

Supersedes Date: 3/29/05

1. PRODUCT AND COMPANY IDENTIFICATION

RHODIA INC.
RHODIA NOVECARE
CN7500
8 Cedar Brook Drive
Cranbury NJ 08512-7500

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS (Communication and Emergency Response System) at 800-916-3232.

For Product Information:

(888) 776-7337

Chemical Name or Synonym:

TRIS(2-CHLOROETHYL) PHOSPHITE

Molecular Formula:

$C_6H_{12}Cl_3O_3P$

2. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:

clear, colorless / liquid, characteristic odor.

Warning Statements:

WARNING!! HARMFUL IF INHALED OR SWALLOWED. POSSIBLE HAZARD TO WOMEN OF CHILD-BEARING POTENTIAL, BASED ON ANIMAL DATA. CANCER HAZARD. CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Not expected to cause significant irritation to the eyes. May cause redness, tearing.

Acute Skin:

Not expected to cause significant irritation to the skin. May cause redness.

Acute Inhalation:

Harmful if inhaled. Can cause coughing, a burning sensation, shortness of breath.

Acute Ingestion:

Harmful if ingested. Can cause nausea, vomiting, irritation.

Chronic Effects:

This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	% WT/WT
ETHANOL, 2-CHLORO-, PHOSPHITE (3:1)	140-08-9	N	~ 80 - 90
ETHYLENE DICHLORIDE	107-06-2	Y	< 3.5
ETHANOL, 2-CHLORO-	107-07-3	Y	< 2
ETHYLENE OXIDE	75-21-8	Y	~ 0.4

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:**Eye Exposure:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention if irritation develops or persists or if visual changes occur.

Skin Exposure:

In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

Inhalation:

If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

Ingestion:

Wash out mouth with water and keep at rest. Seek immediate medical attention.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:**Flash Point:**

89 C (192 F). Flammability Class: COMBUSTIBLE.

Method Used:

Setaflash Closed Cup

Flammability Limits (vol/vol%):

Lower:

No Data

Upper:

No Data

Extinguishing Media:

Recommended: dry chemical, alcohol foam, water fog, carbon dioxide.

Special Fire Fighting Procedures:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Cool containers exposed to fire with water fog.

Unusual Fire and Explosion Hazards:

Containers may explode (due to the build-up of pressure) when exposed to extreme heat.

Hazardous Decomposition Materials (Under Fire Conditions):

oxides of phosphorus

oxides of carbon

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:

Ventilate closed spaces before entering. Eliminate all sources of ignition until the area is determined to be free from explosion or fire hazards. Wear appropriate protective gear for the situation. See Personal Protection information in Section 8. Evacuate and isolate spill area.

Containment of Spill:

Dike spill using absorbent or impervious materials such as earth, sand or clay. Cover spill area with foam to reduce vapors. Follow procedure described below under Cleanup and Disposal of Spill. Collect and contain contaminated absorbent and dike material for disposal.

Cleanup and Disposal of Spill:

Pump any free liquid into an appropriate closed container (see Section 7: Handling and Storage). DO NOT RETURN MATERIAL TO ITS ORIGINAL CONTAINER. Absorb with an inert absorbent. Shovel up into an appropriate closed container (see Section 7: Handling and Storage). Clean up residual material by washing area with water. Collect washings for disposal. Decontaminate tools and equipment following cleanup. Use non-sparking tools. The material should be properly packaged and disposed of in compliance with applicable regulations.

Environmental and Regulatory Reporting:

Do not flush to drain. Runoff from fire control or dilution water may cause pollution. Prevent material from entering public sewer system or any waterways. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:

< 75 C (167 F)

Handling:

Avoid breathing vapors. Avoid direct or prolonged contact with skin and eyes. Use nonsparking tools and grounded/bonded equipment and containers when transferring. Personnel handling this product should be thoroughly trained as to its hazards. Do not get on skin or in eyes. Store, transfer and handle under a blanket of nitrogen.

**** HAZARD WARNING:** If this product is used in combination with Trimethylolpropane, Trimethylolpropane derived products or their corresponding Trimethylol alkane homologs, THERE IS A POSSIBILITY that bicyclic phosphates and/or phosphites may be produced as a result of thermal decomposition. Bicyclic phosphates and phosphites have acute neurotoxic properties and may cause convulsive seizures in laboratory test animals. Therefore, this product should not be used in conjunction with Trimethylolpropane or Trimethylolpropane derived products unless tested to determine their decomposition toxicity. Follow all precautionary measures outlined in this Material Safety Data Sheet and/or contact Rhodia Inc.

Storage:

Contact with air causes degradation. Store in an area that is clean, cool, dry, well-ventilated, away from ignition sources, away from incompatible materials (see Section 10. Stability and Reactivity), Store in tightly closed containers. Store in original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

ETHYLENE DICHLORIDE

	Notes	TWA	STEL
ACGIH		10 ppm	
OSHA		1 ppm	8 mg/cu m
OSHA		4 mg/cu m	2 ppm

ETHANOL, 2-CHLORO-

	Notes	TWA	STEL
ACGIH	S		1 ppm
OSHA	C,S	3 mg/cu m	
OSHA	C,S	1 ppm	
OSHA	S	5 ppm	
OSHA	S	16 mg/cu m	

ETHYLENE OXIDEACGIH
OSHA**Notes**TWA
1 ppm
1 ppmSTEL

5 ppm**Engineering Controls:**

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: enclosed system design, local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:

Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

clear, colorless / liquid.

Odor:

characteristic odor.

pH:

Not Applicable

Specific Gravity:

1.353 at 20 C (68 F).

Density:

1.353 g/ml at 20 C (68 F).

Water Solubility:

slowly hydrolyses

Melting Point Range:

Not Available

Boiling Point Range:

142 C (288 F) at 10 mmHg

Vapor Pressure:

0.1 mmHg at 20 C (68 F)

Vapor Density:

Not Available

Viscosity:

viscosity (centistokes) : 4 to 5 cs at 38 C (100 F). viscosity (centistokes) : 5 to 6 cs at 25 C (77 F).

Molecular Weight:

269.5

10. STABILITY AND REACTIVITY

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7. Material will self-react exothermally when heated above 130C. Keep stored below a temperature of 75C.

Conditions To Be Avoided:

heat

See HAZARD WARNING under HANDLING : in Section 7.

Materials/Chemicals To Be Avoided:

air

water

strong oxidizing agents

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal

oxides of phosphorus

oxides of carbon

Acids of phosphorus

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:

none known

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:

No test data found for product.

Toxicological Information and Interpretation:

eye - eye irritation, **. This material is not expected to cause significant irritation to the eyes.

Acute Skin Irritation:

No test data found for product.

Toxicological Information and Interpretation:

skin - skin irritation, **. This material is not expected to cause significant irritation to the skin.

Acute Dermal Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, > 2000 mg/kg, rabbit.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 100 mg/kg, rat.

Chronic Toxicity:

This product contains the substances that are considered to be "probable" or "suspected" human carcinogens as follows:

Ingredient Name	Regulatory Agency Listing Carcinogen			
	OSHA	IARC	NTP	ACGIH
ETHYLENE DICHLORIDE	No	2B	Yes	No
ETHYLENE OXIDE	Yes	1	Yes	A2

Toxicological Information and Interpretation - MUTAGENICITY, **. Ames Test: Negative. - MUTAGENICITY, **. Mouse Lymphoma Negative. - TERATOGENICITY, **. Product contains which is reported to be a teratogen.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

No data found for product. May cause adverse environmental impact if material reaches waterways.

Chemical Fate Information:

No data found for product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information

presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste - YES

14. TRANSPORT INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed transport classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US DOT:

Hazard Class..... 6.1

Shipping Name:

TOXIC LIQUID, ORGANIC, N.O.S.

Technical Shipping Name:

TRIS 2-CHLOROETHYL PHOSPHITE

ID Number..... UN2810

Packing Group.... III

Labels..... TOXIC

Emergency Guide #.... 153

TDG:

Hazard Class..... 6.1

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S.

Technical Shipping Name: TRIS 2-CHLOROETHYL PHOSPHITE

ID Number..... UN2810

Packing Group.... III

IMO:

Hazard Class..... 6.1

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S.

Technical Shipping Name: TRIS 2-CHLOROETHYL PHOSPHITE

ID Number..... UN2810

Packing Group.... III

IATA:

Hazard Class..... 6.1

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S.

Technical Shipping Name: TRIS 2-CHLOROETHYL PHOSPHITE

ID Number..... UN2810

Packing Group.... III

15. REGULATORY INFORMATION

Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y

AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	N

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS

Inventory Issues:

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- YES
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- YES

SARA 313 Chemicals

ETHYLENE DICHLORIDE (<3.5%) ETHYLENE OXIDE (~0.4%)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
ETHYLENE DICHLORIDE	100 lbs	
ETHANOL, 2-CHLORO-		500 lbs
ETHYLENE OXIDE	10 lbs	1000 lbs

STATE REGULATIONS:

This product contains the following components that are regulated under California Proposition 65:

Ingredient Name	Cancer List	Reprod. List	No Sign. Risk Lvl (ug/day) California	RPI
ETHYLENE DICHLORIDE	Y	N	10	ND
ETHYLENE OXIDE	Y	Y	2	ND

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

- 2 Health Hazard Rating--Moderate
- 2 Flammability Rating--Moderate
- 2 Instability Rating--Moderate

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

- 2 Health Hazard Rating--Moderate
- 2 Flammability Rating--Moderate
- 2 Reactivity Rating--Moderate

Reason for Revisions:

Change and/or addition made to Section 3, Warning Statements in Section 3, WHMIS classification in Section 15, Regulatory Review and Update.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissible Exposure Limit
TWA - Time Weighted Average
STEL - Short Term Exposure Limit
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer
ND - Not determined
RHODIA - Rhodia Established Exposure Limits

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.

**** End of MSDS Document ****