

TCEP

MATERIAL SAFETY AND DATA SHEET

Section 1		Chemical Product and Company Identification	
Name	TCEP	Cat.#UP24221	
Synonyms (CAS, chemical names, tradename, abbreviates...)	TRIS(2-CARBOXYETHYL)PHOSPHINE HYDROCHLORIDE		
Company identification	UPTIMA-INTERCHIM	213 J.F.Kennedy, 03100 Montluçon (FRANCE) Tel. :+33 (0)4 70 03 88 55 Fax: +33 (0)4 70 03 82 60 e-mail: uptima@interchim.com	
In case of Emergency	In Europe: Call UPTIMA-INTERCHIM out of office: Centre anti Poisons de Lyon In US: call CHEMTREC	Tel.: +33 (0)3 70 03 88 55 Tel.: 04 72 11 69 11 Tel.: 800;424;9300	

Section 2		Composition, Information on Ingredients	
Component	Hazardous ingredients (Identification, CAS, Name...)	Information (% weight, state...)	
#UP24221	Tris(2-Carboxyethyl)Phosphine Hydrochloride (C ₉ H ₁₅ O ₆ PHCl; [CAS #: 51805-45-9] Propanoic acid, 3,3',3"-phosphinidynetris-, hydrochloride	100%, powder	

Section 3		Hazards Identification	
Label precautionary statement	CORROSIVE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED MAY CAUSE EYE AND SKIN IRRITATION		
Emergency overview	In case of contact, rinse immediately with plenty of water and seek medical advice. Take off all contaminated clothing.		
Accute health effects (Eye, Skin, Ingestion, Inhalation, Chronic)	Harmfull by inhalation or if ingested. Corrosive, cause burns to eyes, skin, and severe irritation and or burns to the mucous membranes and respiratory tract. Chronic health hazards; not known, toxicological properties have not been thoroughly investigated to our knowledge.		
Other information (over-exposure, toxicity...)	See section 11		
Precautionary guidelines	Wear suitable protective clothing, gloves and eye/face when handling to avoid contact		

Section 4		First aid Measures	
General measures	Remove contaminated clothing promptly. Allow the victim to rest in a well ventilated area, Seek medical attention		
Emergency first measures (Eyes, Skin, Ingestion, Inhalation...)	In case of skin contact, wash thoroughly In case of eye contact, rinse immediately 10min by separating eyelids, and seek for medical advice If inhaled, remove victim to fresh air. If difficul breathing, give oxygen and obtain medical attention. If not breathing, give artificial respiration. If ingested, do NOT induce vomiting, If conscious and alert, rinse mouth, drink plenty of water, and seek for medical advice.		
Notes to physicians	Treat symptomatically		

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Section 5 Fire Fighting Measures	
Physical Information (Flammability, auto-ignition, flash point...)	Non Flammable ; emits toxic fumes and carbon monoxide, oxide phosphorus and or phosphine under fire conditions Sensitivity to explosion: not available.
General information	As in any fire, wear a self-contained breathing apparatus in pressure-demand, and full protective clothing (see section 8)
Extinguishing media	In case of fire, use water or extinguishing media (carbon dioxide, dry chemical powder, or appropriate foam) appropriate to surrounding fire conditions.
Spills and Leaks	Sweep up or vacuum material and place into a suitable disposal container

Section 6 Accidental Release Measures	
General information	Wear a proper personal protective equipment to avoid skin and eye exposure (see section 8): wear respirator, rubber boots, chemical resistant gloves.
Spills and Leaks	Sweep up or vacuum material and place into a suitable waste disposal container. Clean contaminated surfaces by spreading water. Ventilate area. Dispose off according to local and regional authority requirements
Other	

Section 7 Handling and Storage	
Handling	Wear a proper personal protective equipment to avoid skin and eye exposure (see section 8)
Storage	Store all components well tighed at room temperature, or for long terme storage in a cool place (a precipitate may occur, and should be dissolve again before using).

Section 8 Exposure Controls, Personal Protection	
Engineering controls	Ensure there is eyewash stations and safety showers close to the work-stations. Avoid breathing vapors, and provide an exhaust ventilation if prolonged work periods.
Personal protection (eyes, hands, body, respiratory...)	For normal use, rubber gloves usually sufficient when handled properly. Wear protective clothing (laboratory suit, safety goggles) to prevent skin contact. Wash or discard contaminated clothes if reused. Do not breath dust. Use in a chemical fume hood. Avoid prolonged or repeated exposure. Keep tightly closed, store in a cool place. In case of large spill, additionnal protective wears may be needed (boots, splash goggles and safety glasses...). Wear a NIOSH/MSHA or European Standard EN 149 approved full-face piece airline respirator in the positive pressure mode with emergency escape provisions
Exposure limits	consult local authorities

Section 9 Physical and Chemical Properties	
Physical state / Appearance	Solid off white powder
Odor	No remarkable odor
Other (pH, Melting/Freezing Point, Vapor Pressure, Vapor Density, Volatility, Boiling Point, Viscosity, Flash point, Auto-ignition temperature, Explosion limits (low.Upp.), Specific Gravity / Density, Molecular Formula /MW)	Melting point: 177+-2°C Water soluble up310mg/ml pH : (5% solution) 1.8 C ₉ H ₁₅ O ₆ P HCl ; CAS : [51805-45-9] ; MW: 286.65 other datas not available
Comments	Stable

Section 10 Stability and Reactivity	
Chemical Stability Chemical Reactivity (conditions, by -products...)	This product is stable under normal storage and handling conditions (normal temperature and pressure)
Incompatibilities (conditions, materials...)	strong oxidizing agents, strong acids and bases

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Decomposition polymerisation (conditions, materials...)	Hazardous combustion or decomposition may happen with strong oxidizing agents, strong acids and bases or fire. products of combustion are toxic fumes of phosphorus oxides and/or phosphine, but also carbon oxides (CO, CO2), nitrogen oxides (NO, NO2). No Hazardous polymerisation
Comments	

Section 11 Toxicological Information	
Toxicity in animals in human	ORL-RAT LD50: 3500 Mg/kg SKN-RBT LD50:>3000Mg/kg Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Very destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. To the best of our knowledge, properties have not been thoroughly investigated.
Chronic effects (carcinogenicity, teratogenicity, reproductive toxicity, mutagenesis)	No data available about carcinogenicity, teratogenicity, reproductive toxicity and mutagenesis. No data available about sensitization, irritancy, exposure limits.
Remarks (RTECS...)	See actual entry in RTECS for complete information

Section 12 Ecological Information	
Ecotoxicity (BOD5, COD...)	Not available
Biodegradation	
Mobility	
Remarks	Degradation of product may arise in lang term (unlikely in short term). By-products are also toxic.

Section 13 Disposal Considerations	
Waste	Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all local regulations.
Remarks	Consult your local or regional authority or a licensed professional waste service

Section 14 Transport Information	
Classifications (Other classifications)	Not controlled under DOT controlled material (USA), ICAO/IATA, IMDG, ADR (Europe)
Shipping	Room temperature
Hazards Class	
UN Class	UN3261 Class 8
Packing Group	packing group II
Comments (marine pollutants...)	

Section 15 Regulatory Information	
Classification Europe	* European labeling in accordance with EC directives Not Regulated according EU regulations (DSCL/EEC) CAUTION: product not yet fully tested Hazard symbols: CORROSIVE Risk phrases: R34 CAUSE BURNS R20/22 HARMFULL BY INHALATION AND IF SWALLOWED Safety phrases: S26, S27, S36/37/39
Other classifications	* US regulations (HCS) TOXIC, IRRITATING SARA313, CWA 307, CWA 311, CAA 112: not found * Internationnal regulations

Section 16 Additional Information	
MSDS validation	UPTIMA-INTERCHIM, B12E

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Comment	<i>The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages</i>
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