



MATERIAL SAFETY DATA SHEET

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SECTION 1 – CHEMICAL IDENTIFICATION

Trade Name: 1,3-Dipropionyloxy-2-propyloxymethyl propionate Date of Issue: December 6, 1994
Synonym: TRIPrO Revised Date: January 24, 2005
Formula: Mixture
Chemical Family: Mixture
Chemical Use: Pharmaceutical intermediate.
Telephone Number: Information (281) 474-3271
Emergency Number: Chemtrec (800) 424-9300

HMIS Hazard Rating 4 = Extreme
Health: 2* 3 = High
Fire: 2 2 = Moderate
Reactivity: 1 1 = Slight
*-Chronic effect indicator. See Section 11. 0 = Least

PPE rating to be supplied by user
depending on use conditions.

SECTION 2 – HAZARDS IDENTIFICATION

Inhalation: Causes nose, throat, and lung irritation. Inhalation may cause central nervous system depression.
Skin Contact: Causes skin irritation.
Eye Contact: Causes eye irritation.
Ingestion: Causes gastrointestinal tract irritation.

SECTION 3 – COMPOSITION

<u>Components</u>	<u>Percentage</u>	<u>TLV (ppm)</u>	<u>CAS #</u>
1,3-Dipropionyloxy-2-propyloxymethyl propionate	>90	Not Established	104478-28-6
Toluene	<5	50	108-88-3

SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact: Immediately remove contaminated clothing and shoes. Wipe excess material from skin and flush with water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse contaminated clothing without laundering. Get medical attention.

Inhalation: Remove victim to fresh air. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration. Get medical attention.

Ingestion: Have victim drink one to two glasses of water if conscious. Never give anything to an unconscious victim. Get medical attention immediately.

SECTION 5 – FIREFIGHTING MEASURES

Extinguishing Media: Use water, foam, dry chemical, or carbon dioxide (CO₂).

Special Firefighting Procedures/Precautions: Firefighters should wear NIOSH approved self-contained breathing apparatus. Responders should wear protective clothing to prevent skin contact. Move containers from fire area. If unable to move, cool sealed containers with water.

Unusual Fire and Explosion Information: Vapors may travel long distances to ignition sources and flash back. May emit toxic fumes during fire.

Environmental Note: Prevent entry into waterways.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Protective Measures: Evacuate area of unprotected personnel. Eliminate sources of ignition. Stay upwind and out of low areas. Wear personal protective equipment (See section 8) when responding to spills.

Spill Management: Stop source of leak if safe to do so. Dike and contain spill. Use water spray (fog) to reduce vapors. If vapor cloud forms, blanket area with water fog and foam. Use vacuum truck or pump to storage/salvage vessels. Clean up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. Spray area with water to remove trace residue. Contain runoff from residue flush and dispose of properly. Prevent entry into waterways, sewer, or confined areas. Remove contaminated trace residues from soil and dispose of in same manner as material. For small spills, clean up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and dispose of material properly.

Disposal: Proper disposal should be evaluated based on regulatory status of this material (refer to section 13).

SECTION 7 – HANDLING AND STORAGE

Containers should be grounded and bonded when material is transferred. Store in a cool, dry place. Keep away from heat, sparks, and flames.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection:	NIOSH approved respiratory protection for organic vapors.
Ventilation:	Utilize local exhaust to control high vapor connections in confined areas.
Protective Gloves:	Utilize appropriate impervious chemical gloves.
Eye Protection:	Chemical goggles and possibly a face shield. Have eyewash facilities readily available.
Other Protective Equipment:	Wear additional protective clothing to prevent skin contact. This may include chemical resistant boots and chemical resistant suits.
Work Practices:	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	< 320°F (160°C) @ 4 mm Hg
Molecular Weight:	Mixture
Volatility/Vol (%):	Not Established.
Vapor Pressure (mm Hg):	Not Established.
Vapor Density (Air = 1):	>1
Solubility in H ₂ O:	Not Established.
Appearance/Odor:	Clear yellow to brown liquid / Mild odor.
Odor Threshold:	2.9 ppm (Toluene)
Specific Gravity (H ₂ O = 1):	1.16
Evap. Rate (Butyl Acetate = 1):	<1
pH:	Not Established.
Flash Point:	127°F (53°C) PMCC, ASTM D93 (4% toluene)
Lower Explosive Limit:	Not Established.
Upper Explosive Limit:	Not Established.

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	Stable.
Conditions to Avoid:	Keep away from heat and open flames.
Incompatible Materials:	Strong oxidizing agents such as peroxides, permanganates, and nitric acid may produce violent reactions.
Decomposition Products:	Oxides of carbon, and formaldehyde.
Hazardous Polymerization:	Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Carcinogenicity listed by: NTP: No IARC: No OSHA: No

TRIPrO caused toxicity but did not cause deaths in laboratory animals at a dose of 2 g/kg in rats. There was no systemic toxicity in animals after a single dermal dose of 2 g/kg. Not considered mutagenic in the Ames test or a gene mutation test in mammalian cells. Caused chromosomal aberrations (mutagenic) in a mammalian cell test system.

Toluene has exhibited experimental teratogenic and reproductive effects in studies conducted with rats and mice. ACGIH classifies toluene as a category A4 carcinogen. The A4 category denotes chemicals, which are not classifiable as either human or animal carcinogens due to inadequate data. IARC has determined that there is inadequate evidence for the carcinogenicity of toluene in humans. Toluene has not been found to be carcinogenic in animal studies.

ACGIH	TRIPrO	TLV:	Not Established.	STEL:	Not Established.
	Toluene	TLV:	50 ppm	STEL:	N.E.

OSHA	TRIPrO	PEL:	Not Established	STEL:	Not Established.
	Toluene	PEL:	200 ppm	Ceiling:	300 ppm

Inhalation:**Chemical: Toluene**

TCLo: 100 ppm: Central nervous system effects (man)

TCLo: 200 ppm: BRN, CNS, BLD (human)

TCLo: 200 ppm/7H (female 7-16D): Teratogenic effects (mouse)

LC50: 5320 ppm/8H (mouse)

Skin:**Chemical: Toluene**

435 MLD (adult rabbit)

LD50: 12,124 mg/kg (adult rabbit)

Eyes:**Chemical: Toluene**

300 ppm (human)

870 mg MLD (adult rabbit)

Ingestion:**Chemical: Toluene**

LDLo: 50 mg/kg (human)

LD50: 5000 mg/kg (rat)

SECTION 12 – ECOLOGICAL INFORMATION

No data available.

SECTION 13 – DISPOSAL INFORMATION

Place in a city, state, or federally permitted disposal facility. Handle in accordance with all applicable regulations.

SECTION 14 – TRANSPORTATION INFORMATION**US DOT:**

Proper Shipping Name:	Flammable Liquids, n.o.s. (1,3-dipropionyloxy-2-propyloxymethyl propionate, toluene)
Primary Hazard Class:	3
Secondary Hazard Class:	No
Identification Number:	UN 1993
Packing Group:	III
Reportable Quantity:	1000 lbs.
Marine Pollutant:	No
Label(s) Required:	FLAMMABLE LIQUID

SECTION 15 – REGULATORY INFORMATION

TSCA: Not listed on the TSCA inventory. Pharmaceutical exemption.

TSCA 12(b) Export Notification: Not Listed

California Proposition 65: Toluene is known by the State of California to be a reproductive hazard.

SARA Hazard Notification:

Hazard Categories Under Title III:	Acute, Chronic.
Section 302 Extremely Hazardous Substances:	Not Listed.
Section 313 Toxic Chemicals:	Not listed.
CERCLA RQ:	1000 lbs (Toluene).

European Regulations:

EINECS Number:	TRIPrO:	Not Listed
	Toluene:	203-625-9

EC Risk Phrases:

R36/38 - Irritating to eyes and skin.
 S24/25 - Avoid contact with skin and eyes.
 S37/39 - Wear suitable gloves and eye/face protection.
 S53 - Avoid exposure - obtain special instructions before use.

Canadian Regulations:

TRIPrO is not listed on the DSL. All other components are listed.

Japanese Regulations:

TRIPrO is not listed on the ENCS. All other components are listed.

ENCS Number:	TRIPrO:	Not Listed
	Toluene:	3-2

Australian Regulations:

TRIPrO is not listed on the AICS. All other components are listed.

Korean Regulations:

TRIPrO is not listed on the ECL. All other components are listed.

ECL Number:	TRIPrO:	Not Listed
	Toluene:	KE-33936

SECTION 16 – OTHER INFORMATION**PPE Codes (NPCA-HMIS)**

A – Glasses	G – Glasses, Gloves, Vapor Respirator
B – Glasses, Gloves	H – Goggles, Gloves, Apron, Vapor Respirator
C – Glasses, Gloves, Apron	I – Glasses, Gloves, Dust/Vapor Respirator
D – Faceshield, Gloves, Apron	J – Goggles, Gloves, Apron, Dust/Vapor Respirator
E – Glasses, Gloves, Dustmask	K – Supplied Air, Gloves, Full Protective Suit, Boots
F – Glasses, Gloves, Apron, Dust Respirator	

Disclaimer

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