


SILVER FERN CHEMICAL, INC.
Safety Data Sheet (SDS)
Trimethylol Propane Triacrylate - TMPTA

SECTION 1 、 Chemical Product and Company Identification
Product name: Trimethylol Propane Triacrylate - TMPTA
Other name: ETERMER 231
Recommended use of the chemical and restrictions on use: UV Coatings, Inks, Adhesives, Photoresists
<p style="text-align: center;">Details of the supplier of the safety data sheet</p> <p>Distributor</p> <p>Silver Fern Chemical, Inc. 2226 Queen Anne Avenue North Seattle WA 98109, USA Customer Service: 1-866-282-3384 info@silverfernchemical.com</p> <p>Emergency phone number 24 Hour Emergency Contact Infotrac 1-800-535-5053 (USA & Canada) Outside USA & Canada 1-352-323-3500</p>

SECTION 2 、 Hazard Identification
Classification of the substance or mixture: Skin corrosion/irritation Category 2 ; Serious eye damage/eye irritation Category 2 ; Skin sensitization Category 1
<p>Label elements:</p> <p>Symbol: <input type="checkbox"/> Flame <input type="checkbox"/> Exploding <input checked="" type="checkbox"/> Exclamation mark</p> <div style="text-align: center; margin: 10px 0;">  </div> <p><input type="checkbox"/> Gas cylinder <input type="checkbox"/> Health hazard <input type="checkbox"/> Flame over circle <input type="checkbox"/> Corrosion <input type="checkbox"/> Environment <input type="checkbox"/> Skull and crossbones</p> <p>Signal word: Warning</p>

<p>Hazard substance: Trimethylolpropane Triacrylate</p> <p>Hazard statement: H315 Causes skin irritation H317 May cause an allergic skin reaction H319 Causes serious eye irritation</p> <p>Precautionary statements: Prevention P264 Wash thoroughly after handling. P280 Wear protective gloves. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>Response P302 + P352 IF ON SKIN: Wash with plenty water P321 Specific treatment (see First Aid Measures) P362 + P364 Take off contaminated clothing and wash it before reuse. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/attention.</p> <p>Disposal P501 Dispose of contents/container in accordance with local regulations.</p>
<p>Other hazards: Skin sensitization hazard, Heat generation when polymerization, carbon oxide generation when decomposition by heat.</p>

SECTION 3 、 Composition/Information on Ingredients
Pure material:
Substance Identity: Trimethylol Propane Triacrylate
Synonyms: TMPTA
CAS No: 15625-89-5
Approx. Weight Percent (%): 100%
Remark: —

SECTION 4、 First Aid Measures
<p>The first-aid measures for different exposure routes:</p> <p>Inhalation: If overcome by exposure , remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.</p> <p>Skin contact: Remove contaminated clothing as needed.wash skin thoroughly with mild soap/water.Flush with lukewarm water for 15 minutes.If sticky,use waterless cleaner first.</p> <p>Eyes contact: In case of eye contact, immediately rinse with clean water for 20-30minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking.tears or redness persist.</p> <p>Ingestion: If large quantity swallowed, give lukewarm water (pint) if victim completely conscious / alert. Do not induce vomiting / risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.</p>
<p>The most important symptoms and hazardous effects: Skin sensitization hazard.</p>
<p>The protection of first-aiders: Wear C class protective equipment and first aid in safety area.</p>
<p>Notes to physicians: Skin sensitization hazard. Chemical burn with long-term contact.</p>

SECTION 5、 Fire Fighting Measures
<p>Suitable fire extinguishing media: Foam, carbon dioxide or dry chemical.</p>

<p>Specific hazards may be encountered during fire-fighting: High temperatures.inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat / pressure. Closed containers may rupture or explode during runaway polymerization.</p>
<p>Specific fire-fighting methods: Full protective equipment, including self contained breathing apparatus is needed to protect fire fighters from exposure.</p>
<p>Special equipment / instructions for the protection of firefighters: Chemical splash goggles and/or face shield, respiratory protection equipment, protective gloves, apron, boot.</p>

SECTION 6、 Accidental Release Measures
<p>Personal precautions: Wear proper protective equipment, avoid raw material contact and vapor inhalation.</p>
<p>Environmental precautions: 1. Extinguish all ignition sources and ventilate area. 2. Dispose/report per regulatory requirements.</p>
<p>Clean-up procedures: 1. Avoid contact spilled or released material 2. Reduce spill or release in safety condition. 3. Soak up small spill with inert solids (such as vermiculite, clay) and sweep/shovel into vented disposal container. 4. Dike and recover large spill. Obtain emergency help by fire or emergency unit.</p>

SECTION 7、 Safe Handling and Storage Measures
<p>Handling procedures: This product is inhibited to prevent uncontrolled polymerization. A polymerization can generate heat and pressure and may cause product container to rupture. Check inhibitor content often and add inhibitor to bulk liquid if needed.</p>
<p>Storage procedures: Maintain head space in storage containers to support oxygen requirements of the inhibitor(s). Do not blanket or mix with oxygen free gas, and prevent material from freezing (inhibitor can separate from product as a solid). Store drums above 10 /50 and below 32 /90 . Bulk storage temperature range:15-27 /59-80 . Store drums away from heat sources, strong oxidizers, radiation and other initiators. Use product within six months of receipt for optimum results. If material freezes, heat and mix to redistribute the inhibitor. Product may also be heated to facilitate handling. Heat product container slowly to 40 /104 for not more than 24 hours. Convection ovens or warm water bath (preferred due to more efficient heat transfer) are recommended for heating. Do not use drum heater. An air space, preferably an air bubble flow, should be provided for at all times during heating.</p>

SECTION 8、 Exposure Controls Measures				
<p>Engineering controls: 1. Using no spark, grounding ventilation system, and separate from general ventilation system. 2. Exhaust waste gas to outdoor, and take applicable measure to protect environment. 3. Using local exhaust ventilation and closed processing system when mass production. 4. Complement exhaust air by ventilation system with supply plenty fresh air.</p>				
Control parameters				
Substance name	8 hours time weighted average exposure limits (TWA)	short-term exposure limits (STEL)	maximum exposure limits (CEILING)	biological standards (BEIs)

Trimethylol Propane Triacrylate	—	—	—	—

Personal protective equipment:

Respiratory protection: If this material is handled at elevated temperature or under mist forming conditions, NIOSH/MSHA approved respiratory protection equipment should be used.

Hand protection: Do not use natural rubber gloves.

Products without solvents added: wear nitrile gloves.

Products used with solvents: wear thick (>0.5 mm) nitrile gloves.

Replace gloves immediately when torn or any change in appearance (dimension, color, flexibility, etc) is noticed.

Eye protection: Eye protection such as chemical splash goggles and /or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.

Skin and body protection: Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.

Hygiene measures:

1. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
2. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities.
3. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

SECTION 9、 Physical and Chemical Properties

Appearance (physical state, colour, etc): Liquid at 25	Odor: Mild,musty odor
Odor threshold: —	Melting point/freezing point: —
pH value: —	Boiling point/boiling range: —
Flammability (solid, gas): /	Flash point: °F >110 °C
Decomposition temperature: —	Test method: <input type="radio"/> Open cup <input checked="" type="radio"/> Closed cup
Autoignition temperature: —	Explosion limits: —
Vapor pressure: —	Vapor density: —
Density: 1.09-1.12 g/cm ³ (25)	Solubility: Insoluble in water Soluble in acetone: >30g/20g(25)
Partition coefficient of n-octanol/water: —	Evaporation rate: —

SECTION 10、 Chemical Stability and Reactivity Information

Chemical Stability: Stable on normal condition.

Possible hazardous reactions occurring under specific conditions:

Heat and pressure generation when polymerization and the result in closed container broken and cracked.

Conditions to be avoided: High temperatures, localized heat sources (i.e., drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing.

Materials to avoid: Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

Hazardous decomposition products: Acrid smoke-fumes/carbon monoxide/carbon dioxide and perhaps other toxic vapors may be released during a fire involving this product.

SECTION 11、 Toxicological Information

Routes of exposure: Skin, inhalation, ingestion, eyes.

Symptoms: After inhalation: No significant signs or symptoms indicative of any adverse health hazard are expected to occur at standard conditions due to the low volatility of this material. However, aerosols, or vapors which may be generated at elevated processing temperatures, may cause respiratory tract irritation. Symptoms of irritation may include coughing, mucous production and shortness of breath.

After skin contact: Although no appropriate human or animal health effects data are known to exist, this material is expected to be a skin irritant. Symptoms may include localized redness or rash and swelling of the affected area. Symptoms may be delayed. A more severe skin response may occur after prolonged contact with this material. Although no appropriate human or animal health effects data is known to exist, this material may cause an allergic skin reaction (sensitization) in susceptible individuals upon repeated exposure.

After eye contact: Although no appropriate human or animal health effects data are known to exist, this material is expected to cause eye irritation with symptoms including burning sensation, tearing, redness or swelling.

After ingestion: Although no appropriate human or animal health effects data are known to exist, this material is expected to be a slight ingestion hazard.

Acute toxicity: LD50 (oral, rat): 5,190 mg/kg

Chronic toxicity or long term toxicity: —

SECTION 12、 Ecological Information

Ecological toxicity: —

Persistence and degradability: —

Bio-accumulative potential: —

Mobility in soil: —

Other adverse effects: —

SECTION 13、 Waste Disposal Measures

Methods of waste disposal: 1. Residues and spilled material may be hazardous waste due to potential for internal heat generator. Disposal must be in accordance with applicable federal, state, or local regulations.

2. The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Since the emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14、 Transport Information

United nations number (UN No): /

UN Proper shipping name: /

Transport hazard class(es): /

Packing group number: —

Marine pollutant (YES / NO) : YES NO

Specific transport measures and precautionary conditions:

DOT - Not regulated

IATA - Not regulated

SECTION 15、 Regulatory Information

Applicable regulations: TSCA status: All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

International Inventory Status

Australia (AICS)	Included on inventory
Canada (CEPA)	Included on DSL inventory
Japan (ENCS)	Included on inventory
China (IECSC)	Included on inventory
Europe (EC)	Included on EINECS inventory
Korea(ECL)	Included on inventory
New Zealand(NZIoC)	Included on inventory

Note : Qualifiers and codes used in this SDS

N/A = Not Applicable; N/DA = No Data Available; AP = Approximately

SECTION 16、 Other Information

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.