

Safety Data Sheet

ZrO₂ in Benzyl Methacrylate and TMPTA

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Products governed by this MSDS: PCPA-##-BMT-###, PCPN-##-BMT-###. Where “##” and “###” are any alphanumeric combination.

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Emergency Phone Number:
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GHS Classification

Acute toxicity-Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2B)

GHS Label elements

Precautionary pictograms:



Signal word: WARNING

H302 Harmful if swallowed
H315 Causes skin irritation.
H320 Causes eye irritation.

Precautionary statements:

Prevention:

P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face

Response:

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302+P352: IF ON SKIN: Wash with plenty of water. If irritation persists, repeat flushing.
P330 Rinse Mouth
P332+P313 If skin irritation occurs: Get medical advice/attention
P337+P313 If eye irritation persists: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse

Storage:
P403+P235 Store in a well ventilated place. Keep cool.

Disposal:
P501 Dispose of contents/container in accordance with all national and local regulations.

2. HAZARD IDENTIFICATION

3. COMPOSITION/INFORMATION OF INGREDIENTS

Chemical Name	CAS#	%
Zirconium oxide (in nanocrystal form)	1314-23-4	40-90
Capping agent	Trade Secret	1-20
Benzyl methacrylate	2495-37-6	10-40
Trimethylolpropane triacrylate (TMPTA)	15625-89-5	1-15
Benzophenone	119-61-9	0.1-2

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard found at 29 CFR 1910.1200. Exact concentrations are being withheld due to trade secrets and due to variability of concentrations covering the range of products indicated above.

4. FIRST AID MEASURES

Consult a physician. Show this MSDS to the doctor.

Eye

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes, while holding the eyelid(s) open. Obtain medical advice.

Skin

As quickly as possible, remove contaminated clothing, shoes, and leather goods. Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with lukewarm gently flowing water and non-abrasive soap for 15 minutes. If irritation persists, repeat flushing. Obtain medical advice. Completely decontaminate clothing, shoes and leather goods before reuse or discard. Get immediate medical attention.

Inhalation

Move person to fresh air. Give artificial respiration if needed. If breathing is difficult, qualified personnel should administer oxygen. Get immediate medical attention.

Ingestion

Do not induce vomiting unless directed to do so by medical personnel. Get immediate medical attention.

5. FIRE AND EXPLOSION DATA

Extinguishing Media

Use water fog or spray, alcohol-resistant foam, carbon dioxide or dry chemical.

Special Fire Fighting Procedures

Wear an approved, positive pressure, self-contained breathing apparatus and full protective clothing. Cool fire exposed containers with water.

Unusual Fire Hazards

Smoke, fumes containing incomplete combustion products.

Hazardous Decomposition Products

Oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate protective clothing to prevent eye and skin contact. Contain runoff from spills, dilution, and fire prevention. Cover with an inert absorbent material and collect into an appropriate container for disposal. Report spills and releases as required to appropriate authorities.

7. HANDLING AND STORAGE

Handling

Avoid breathing vapors, aerosols and mists. Use with adequate ventilation. Avoid contact with the eyes, skin and clothing. If dried, use PPE in the presence of solid.

Storage

Store in a cool, dry, well-ventilated location. Keep containers tightly closed when not in use. Heat and light sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	Exposure Limits
Zirconium compounds	5 mg/m ³ TWA (OSHA)
Capping agent	None Established
Benzyl methacrylate	None Established
Trimethylolpropane triacrylate (TMPTA)	TWA: 1 mg/m ³ USA. Workplace Environmental Exposure Levels (WEEL)
Benzophenone	TWA: 0.5 mg/m ³ USA. Workplace Environmental Exposure Levels (WEEL)

Respiratory Protection

If needed, a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) cartridges may be used. For higher exposures, a supplied air respirator may be required. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice. Use with adequate general or local exhaust ventilation to maintain exposure levels below the occupational exposure limits.

Skin Protection

Impervious gloves are recommended.

Eye Protection

Chemical safety goggles recommended.

Other Protective Equipment

Impervious clothing is required to prevent skin contact and contamination of personal clothing. If dried, use PPE in the presence of solid.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: viscous liquid

pH:	Not applicable	Specific Gravity:	>1.50 g/cm ³
Boiling Point:	Not available	Melting Point:	Not available
Vapor Pressure:	Not available	Water Solubility:	Not available
Vapor Density:	Not available	Flammable Limits: LEL:	Not available
Flash Point:	>100C	Flammable Limits: UEL:	Not available
Evaporation Rate:	Not available		

10. STABILITY AND REACTIVITY**Incompatibility/Conditions to Avoid**

Strong oxidizing agents, Reducing agents, Strong acids, Strong bases, Brass, Copper, Steel, Iron and iron salts. Peroxides, free radical initiators. Exposure to light may affect product quality. Exposure to heat may affect product quality.

Hazardous reactions

The product is stabilized against spontaneous polymerization.

The product can polymerize if the shelf life or storage temperature are greatly exceeded. Heat develops during polymerization. Reacts with peroxides and other radical components.

Hazardous Decomposition Products

Combustion will produce oxides of carbon.

11. TOXICOLOGICAL INFORMATION**Potential Acute Health Effects**

Eye: Causes eye irritation. Symptoms may also include redness, tearing and blurriness. May cause corneal injury.

Skin: Causes skin irritation. Symptoms may include redness. May cause sensitization (allergic response) in susceptible individuals.

Inhalation: No adverse effects expected.

Ingestion: Toxicity expected to be low based on chemical ingredients.

Aspiration: Not known.

No toxicological data available for product

12. ECOLOGICAL INFORMATION

No ecological toxicity data available for product

13. DISPOSAL INFORMATION

Dispose of by incineration.

Any leftover product is to be disposed of by incineration. Disposal in accordance with all local, state and federal regulations (40CFR260-268). Contaminated packaging is to be triple rinsed with appropriate organic solvent/monomer prior to being disposed of. The contaminated rinse solvent/monomer is to be treated as hazardous waste and must be disposed of by incineration. No other disposal method is acceptable.

14. TRANSPORT INFORMATION

DOT (US): Not dangerous goods

IATA: Not dangerous Goods

15. REGULATORY INFORMATION

All components of this product are included on the TSCA Inventory or are not required to be listed.

16. OTHER INFORMATION

MSDS Date of Preparation: 10/28/2013

Emergency Overview

Causes eye and skin irritation. May be harmful if inhaled. Causes respiratory tract irritation. May be harmful if absorbed through skin.

Glossary:

IARC = International Agency for Research of Cancer

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Act

TSCA = Toxic substances Control Act

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