



SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Zirconium (IV) Oxide**
PRODUCT NO: 3922
CAS NO: 1314-23-4
SYNONYMS: Zirconium Dioxide, Zirconia
MANUFACTURER:

ProChem, Inc.
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Rockford, IL 61109

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IN CASE OF TRANSPORTATION EMERGENCY CONTACT CHEM-TREC: 1-800-424-9300

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Not a dangerous substance according to the GHS

HMIS CLASSIFICATION:

Health: 0 Flammability: 0 Reactivity: 0

NFPA RATING:

Health: 0 Fire: 0 Reactivity Hazard: 0

EYE CONTACT: May cause slight to mild irritation of the eyes.

SKIN CONTACT: May cause slight to mild irritation of the skin.

INHALATION: May be irritating to the nose, mucous membranes, and respiratory tract.

INGESTION: No information on the physiological effects of ingestion.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: ZrO_2

Molecular Weight: 123.22

CHEMICAL NAME	CAS#	%
Zirconium (IV) Oxide	1314-23-4	100

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

SECTION 4 FIRST AID MEASURES (Cont.)

SKIN EXPOSURE: Wash affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

INHALATION: Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.

INGESTION: Seek medical assistance immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: Product is not flammable

AUTO IGNITION TEMPERATURE: None

EXPLOSION LIMITS: This product does not present an explosion hazard.

EXTINGUISHING MEDIUM: Use fire fighting measures that suit the surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: If involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: None

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation and breathing dust. Keep unprotected persons away.

ENVIRONMENTAL PRECAUTIONS: Do not let enter drains or allow to be released into the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Sweep up and place in suitable container for proper disposal.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear personal protective equipment. Ensure adequate ventilation.

CONDITIONS FOR SAFE STORAGE: Store in a cool, dry, and well-ventilated area. Store away from oxidizing agents.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS:

Component	Exposure Limits	Basis	Entity
Zirconium (IV) Oxide	5 mg/m ³	TWA	OSHA
	10 mg/m ³	TLV	ACGIH

TLV: Threshold Limit Value over 8 hours of work.

TWA: Time Weighted Average over 8 hours of work.

EYE PROTECTION: Always wear approved safety glasses with side shields, safety goggles, or face shield when handling a chemical substance in the laboratory.

SKIN PROTECTION: Chemical resistant gloves.

VENTILATION: If possible, handle the material in an efficient fume hood.

RESPIRATOR: Respirator selection should be based on anticipated exposure levels.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: White solid

ODOR: None

MOLECULAR WEIGHT: 123.22

MELTING POINT: 2,700° C

BOILING POINT: 5,000° C

SPECIFIC GRAVITY 5.89

SOLUBILITY: Insoluble in cold/hot water. Slightly soluble in Hydrochloric acid and nitric acid. Slowly soluble in HF.

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: No data
INCOMPATIBILITY: Strong oxidizing agents and strong acids
DECOMPOSITION PRODUCTS: None

SECTION 11 TOXICOLOGICAL DATA

RTECS DATA: No data
CARCINOGENIC EFFECTS: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen.
MUTAGENIC EFFECTS: No data
TETRATOGENIC EFFECTS: No data
TOXICITY DATA: No data

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 ECOLOGICAL DATA

TOXICITY TO FISH: Mortality LC50-Brachydanio rerio (zebrafish) - >100 mg/l – 96 h.
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES: Static test EC50- Daphnia magna (Water flea) - >100 mg/l-48h.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

Non-hazardous material

SECTION 15 REGULATORY INFORMATION

TSCA: Listed in the TSCA Inventory
SARA 302 COMPONENTS: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA (TITLE 313): Title compound not listed
MASSACHUSETTS RIGHT TO KNOW: Zirconium (IV) Oxide
PENNSYLVANIA RIGHT TO KNOW: Zirconium (IV) Oxide
NEW JERSEY RIGHT TO KNOW: Zirconium (IV) Oxide
MAINE: Product does not contain any listed chemicals
VERMONT: Product does not contain any listed chemicals
WASHINGTON: Product does not contain any listed chemicals
CALIFORNIA PROP. 65: Not listed

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, ProChem, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.

DATE PREVIOUSLY REVISED: 02/23

DATE REVISED: 07/26

REVISION SUMMARY: Removed fax number and updated Section 15. All other details in this document about the product remained unchanged. Updated by EHS 7/15/26.
EHS/SDS DEPT.