Material Safety Data Sheet (MSDS)

Tungsten Trioxide

Section 1: Product Identification

- Product Name: Tungsten Trioxide
- CAS No: 1314-35-8
- Synonyms: Tungsten Oxide
- Recommended Use: Precursor for tungsten-containing materials; used in catalysts, ceramics, and electrochromic devices such as smart windows (Industrial)

Section 2: Hazards Identification

- **Classification (GHS):** Flammable liquids; Acute toxicity, Oral; Skin irritation; Eye irritation.
- **Signal Word:** Warning

- **Hazard Statements:**

- Harmful if swallowed
- Causes skin irritation and serious eye irritation
- Combustible liquid
- Keep away from heat/sparks/open flames. No smoking

Section 3: Composition / Information on Ingredients

- **Assay:** ≥ 99%

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Section 4: First Aid Measures

- **Inhalation:** Remove to fresh air. If symptoms develop, seek medical attention.
- **Skin Contact:** Wash with plenty of soap and water. Remove contaminated clothing. Seek medical advice if irritation persists.
- **Eye Contact**: Rinse cautiously with water for several minutes. Remove contact lenses if present. Continue rinsing. Seek medical attention if irritation persists.
- **Ingestion:** Rinse mouth. Do NOT induce vomiting. Seek medical advice if feeling unwell.

Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Dry chemical, foam, carbon dioxide water spray.
- **Specific Hazards:** Combustible liquid; emits toxic fumes of carbon oxides under fire conditions.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Use personal protective equipment. Avoid breathing vapors. Ensure adequate ventilation. Eliminate ignition sources.

Section 7: Handling and Storage

- **Handling:** Avoid inhalation of vapors and contact with skin/eyes. Use with adequate ventilation. Keep away from ignition sources.
- **Storage:** Keep container tightly closed. Store in a cool, dry, well-ventilated place away from heat and oxidizing agents.

Section 8: Exposure Controls / Personal Protection

Exposure Limits: ACGIH TLV 50 ppm 205 mg/m³ TWA; OSHA PEL not established.

Engineering Controls: Provide adequate ventilation and local exhaust if needed.

Personal Protective Equipment: Chemical-resistant gloves, safety goggles, protective clothing. Respirator if ventilation is inadequate.

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Section 9: Physical and Chemical Properties

- **Physical Appearance:** Yellow fine powder
- **Boiling Point:** 1740 °C
- **Flash Point:** 1000 °C
- **Solubility:** Insoluble in water; soluble in hot concentrated acids and bases
- **Molecular Weight:** 231.84 g/mol

Section 10: Stability and Reactivity

- **Stability:** Stable under normal conditions.

Section 11: Toxicological Information

- **Routes of Exposure:** Inhalation, ingestion, skin and eye contact.
- **Acute Effects:** Harmful if swallowed; causes skin and eye irritation; may cause respiratory irritation.
- **Chronic Effects:** Prolonged or repeated exposure may cause dermatitis and liver/kidney effects.

➢ 11.1 Information on Toxicological Effects

- **Acute Toxicity:**
  Oral LD_{50} (Rat): >2,000 mg/kg body weight
  Inhalation LC_{50} (Rat, 4 h): >5.36 mg/L
  Dermal LD_{50}: No data available
- The above acute toxicity values are reported in a current supplier SDS for Tungsten(VI) oxide and are based on OECD test guidelines 423 and 403 respectively.
- **Skin Corrosion/Irritation:** No skin irritation reported in the cited reference study.
- **Serious Eye Damage/Irritation:** No eye irritation reported in the cited reference study.
- **Respiratory or Skin Sensitization:** No skin sensitization reported in the cited reference study.
- **Germ Cell Mutagenicity:** Ames test reported negative in the cited reference SDS.
- **Carcinogenicity:** No component is identified as a known or anticipated carcinogen by the cited regulatory sources at the relevant reporting level.
- **Reproductive Toxicity:** No data available.
- **Specific Target Organ Toxicity – Single Exposure:**No data available.
- **Specific Target Organ Toxicity – Repeated Exposure:**No data available.
- **Aspiration Hazard:** No data available.

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Section 12: Ecological Information

- **Ecotoxicity:** May be harmful to aquatic life in high concentrations.
- **Persistence and Degradability:** Expected to be biodegradable.
- **Bioaccumulative Potential:** Low to moderate potential.

Section 13: Disposal Considerations

- Dispose of contents/container in accordance with local/regional/national regulations. Do not release into the environment.

Section 14: Transport Information

- **UN Number:** Not applicable / None assigned
- **UN Proper Shipping Name:** Tungsten Trioxide
- **Transport Hazard Class(es):** Not regulated as dangerous goods under IATA-DGR
- **Packing Group:** Not applicable
- **Environmental Hazards:** Not classified as an environmentally hazardous substance for air transport.
- **Special Precautions for User:** No special precautions required for transport other than normal safe handling and prevention of package damage and dust release.
- **Transport in bulk according to IMO instruments:** Not applicable

IATA-DGR: Not regulated as a dangerous good.

IMDG-Code: Not regulated as a dangerous good.

ADR/RID: Not regulated as a dangerous good.

Section 15: Regulatory Information

- Complies with Indian chemical safety regulations and listed under international chemical inventories.

Section 16: Other Information

- **Disclaimer:** The above information is believed to be correct but does not claim to be exhaustive. Users are responsible for verifying suitvewnndndability under actual conditions of use. Samarth Metachem Pvt. Ltd. disclaims any liability for damage resulting from handling or contact.

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