



Material Safety Data Sheet

Blue Tungstic Oxide (BTO)

Section 1 – Chemical Product and Company Identification

Product name: Blue Tungstic Oxide (BTO)
Company Identification: Niagara Refining LLC
Address: 5661 Transit Rd, PO Box 398, Depew, NY 14043, USA
Telephone: +1 (716) 706-1400
Fax: +1 (716) 706-1299
Emergency Number: +1 (716) 706-1400

Section 2 – Composition, Information on Ingredients

Material name: Blue Tungstic Oxide
CAS No.: This material contains similar compounds to that tungsten oxide of CAS# 1314-35-8
Percent by weight: >99
Exposure limit : ACGIH 5 mg/ m³TWA (as W)

Section 3 – Hazards Identification

Appearance and odor: Blue to dark -blue powder, no odor

Warning: Exposure of this material may be causes eye, skin, and respiratory tract irritation. May be harmful if swallowed.

Potential Health Effects

Eye: Dust particles may cause eye irritation.

Skin: Prolonged or repeated contact may cause skin irritation.

Ingestion: No adverse effects are likely from the accidental ingestion of small amounts of this material. Larger quantities may cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Carcinogenic assessment (NTP, IARC, other): Has not been classified as a known or suspected carcinogen.

Section 4 – First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water. If irritation persists, get medical aid.

Skin: In case of contact, thoroughly wash skin with mild soap and water. If irritation persists, get medical aid.

Ingestion: If substantial quantities are swallowed, do not induce vomiting unless directed to do so by medical personnel. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical aid.

Section 5 – Fire Fighting Measures

Flash point: N/A

Flammable limits: N/A

General hazard: No fire hazard

Extinguishing media: Use extinguishing media suitable for the surrounding fire such as water, carbon dioxide, etc.

Section 6 – Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

Section 7 – Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Use a vacuum, wet clean up, or other good housekeeping procedures to prevent accumulation of dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Section 8 – Exposure Controls, Personal protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits for the TVL. If such equipment is not available, use respirators as specified below.

Exposure Limits:

Chemical name	ACGIH	NIOSH	OSHA - Final PELs
Tungstic oxide	5 mg/m ³ TWA (as W) (listed under Tungsten, insoluble compounds). 10 mg/m ³ STEL (as W) (listed under Tungsten, insoluble compounds).	5 mg/m ³ TWA (as W) (listed under Tungsten, insoluble compounds).	none listed

Respiratory protection: A NIOSH approved respirator should be worn when airborne dust levels exceed the TVL. The respirator chosen should have a protection factor appropriate for the level of exposure. Under normal circumstances, an air-purifying respirator with dust/fume cartridges should be adequate. Under extreme exposure conditions, use a positive-pressure, air-supplied respirator which meets appropriate standards for use as respiratory protection (such as 29 CFR 1910.134).

Skin protection: Protective clothing and gloves are recommended if prolonged repeated contact is likely.

Eye protection: Safety glasses or goggles are recommended.

Section 9 – Physical and Chemical Properties

Physical State:	Powder
Appearance:	Blue to dark-blue in color
Odor:	Odorless
pH:	Does not apply
Vapor Pressure:	Not available
Vapor Density:	Not available
Evaporation Rate:	Not applicable
Viscosity:	Not applicable
Boiling Point:	Not available
Freezing/Melting Point:	Not applicable
Decomposition Temperature:	Not available.
Flash point:	Non-flammable
Solubility:	Insoluble
Specific Gravity/Density:	7.15 – 7.72
Molecular Formula:	WO _{2.9} to WO _{2.72}
Molecular Weight:	230.25 – 227.37

Section 10 – Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Dust generation.

Incompatibilities with Other Materials: Strong acid and alkali

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur

Section 11 – Toxicological Information

Acute and chronic toxicity: Not applicable. Studies have shown pure tungsten to be toxicologically inert.

Carcinogenicity: Not listed by ACGIH, IARC, NTP, EPA

Section 12 – Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are non-toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13 – Disposal Considerations

When possible, waste containing this material should be segregated and sent to a metals recycler for recovery. Waste material that cannot be reclaimed must be disposed of in compliance with local, state, and federal law and regulations.

Section 14 – Transport Information

Not regulated by USDOT, IATA and IMO

UN Number: Not regulated

Packing Group: Not regulated

Section 15 – Regulatory Information

TSCA (USA): This materials are similar compounds to that tungsten oxide of CAS# 1314-35-8 listed on the TSCA inventory.

SARA (USA): Not applicable

HMIS (USA):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

WHMIS (Canada): This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

EINECS (EEC): This product is on the European Inventory of Existing Commercial Chemical Substances.

DSCL (EEC): R36/37/38- Irritating to eyes, respiratory system and skin. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28- After contact with skin, wash immediately with plenty of water. S36- Wear suitable protective clothing. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Section 16 – Additional Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Niagara Refining LLC be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Niagara Refining LLC has been advised of the possibility of such damages.