

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Material Name: Osmium Tetroxide.
Catalogue Number: C010, C012.
Other Names: Osmic Acid; Osmic acid anhydride.
Recommended Use: Used as a fixative for electron microscopy.

Supplier Name: ProSciTech
Street Address: 1/11 Carlton Street, Kirwan, Qld. 4817 Australia
Telephone Number: (07) 4773 9444 - 8:30am – 5:00pm, Monday to Friday (excluding Public Holidays)
Emergency Contact: (07) 4773 9444 - 8:30am – 5:00pm, Monday to Friday (excluding Public Holidays)

SECTION 2 - HAZARDS IDENTIFICATION

Hazard Classification:

Hazardous according to the criteria for Classifying Hazardous Substances [NOHSC:1008].

Hazardous and/or Dangerous Nature:

HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

Risk Phrases:

R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.

R34 Causes burns.

Safety Phrases:

S1/2 Keep locked up and out of reach of children.

S7/9 Keep container tightly closed and in a well-ventilated place.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Refer to Section 15 for Poisons Schedule.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Pure Substance (Proportion 100%):

Chemical Identity: Osmium tetroxide.
Common Name(s): Osmic Acid; Osmic acid anhydride
CAS Number: 20816-12-0

SECTION 4 - FIRST AID MEASURES

Ingestion: Rinse mouth. Give nothing to drink. Rest. Seek medical attention immediately.

Inhalation: Fresh air, rest. Half-upright position. Artificial respiration if indicated, seek medical attention immediately.

Eye Contact: First rinse with plenty of water for 15 minutes, then contact a physician immediately.

Skin Contact: First rinse with plenty of water for 15 minutes, then remove contaminated clothes and rinse again. Then contact a physician immediately.

First Aid Facilities: Eyebath/eyewash, Safety shower & general washroom facilities.

Medical Attention & Special Treatment:

Treat symptomatically and supportively.

Additional Information:

Danger! May be fatal if swallowed or inhaled. Causes severe irritation to eyes, skin and respiratory tract.

SECTION 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

In case of a fire in the surrounding area, all extinguishing agents allowed.

Hazards from Combustion Products:

Osmium tetroxide is a strong oxidizer and may react explosively with many organic compounds. Risk of fire and explosion when mixed with combustible substances. No contact with flammable substances. Not combustible but enhances combustion of other substances. When heated to decomposition, emits highly toxic fumes of osmium. Begins to sublime below boiling point, contact with other materials may cause fire.

Precautions for Fire Fighters:

In event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Hazchem Code: 3WE

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Emergency Procedures:

Evacuate area immediately! Consult an expert.

Containment & Clean up:

Sweep spilled substance into containers. If appropriate, moisten first to prevent dusting then remove to safe place. Do not absorb in saw-dust or other combustible material. Do not let this chemical enter the environment (extra personal protective equipment with full protective equipment and self-contained breathing apparatus is a must).

SECTION 7 - HANDLING & STORAGE

Precautions for Safe Handling:

If eyes are exposed to vapour over a short period of time, night vision will be affected for about one evening. One will notice coloured halos around lights. Store compatible chemical-resistant gloves. Wash hand thoroughly after handling.

Precautions for Safe Storage:

Store in a cool, dry area away from incompatible substances and sources of ignition. Store in a well-ventilated area.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards: Osmium Tetroxide, Cas 20816-12-0:
TWA 0.0002ppm; TWA 0.0016mg/m³
STEL 0.0006ppm; STEL 0.0047mg/m³

Biological Limit Values: No biological limit allocated.

Engineering Controls:

Local exhaust: required in handling area.

Mechanical: desirable to insure concentration of material below TWA levels.

Other: fume hood

Personal Protective Equipment:

Respiratory Protection: 0.1mg/m³ supplied air respirator with a full face piece.

Eye Protection: ANSI approved safety glasses/goggles or full face piece with respirator Skin Protection: rubber/neoprene (use compatible chemical-resistant gloves)

Other Protective Clothing Or Equipment: Lab coat/apron, flame and chemical resistant protective clothing, eye wash, safety shower, and hygiene facilities for washing.

Work hygienic practices: Wash thoroughly after handling. Wash thoroughly with soap and water after every handling.

Exposure Guidelines: use chemical goggles and face shield.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Clear to yellow solid.
Odour:	Sharp chlorine like odour.
pH:	Not available.
Vapour pressure:	1.5 kPa @ 27°C.
Vapour density:	(Air=1): 8.8
Boiling point/range (°C):	130°C.
Freezing/melting point (°C):	Melting point: 42°
Solubility:	6% at 25°C in water.
Specific gravity or density:	(h ₂ o=1): 5.10
Flash Point:	Not available.
Flammable (explosive) limits:	Not available.
Ignition temperature:	Not available.
Additional Information:	Not available.

SECTION 10 - STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions of use.

Conditions to avoid: Incompatible materials.

Incompatible Materials: Combustible material, HCL and oxidized agents.

Hazardous Decomposition Products:

Osmium tetroxide is a strong oxidizer and may react explosively with many organic compounds. Risk of fire and explosion when mixed with combustible substances. No contact with flammable substances. Not combustible but enhances combustion of other substances. When heated to decomposition, emits highly toxic fumes of

osmium. Begins to sublime below boiling point, contact with other materials may cause fire.

Hazardous Reactions: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Exposure and Health Effects:

Danger! May be fatal if swallowed or inhaled. Causes severe irritation to eyes, skin and respiratory tract. Potential kidney damage.

Ingestion:

Abdominal cramps, burning sensation, shock or collapse.

Inhalation:

Burning sensation, cough, headache, wheezing, shortness of breath, visual disturbances, symptoms may be delayed.

Eye Contact:

Redness, pain, blurred vision, loss of vision, severe deep burns.

Skin Contact:

Possible skin discoloration (green or black), redness, skin burns, pain, blisters.

Human/Animal data: Not available.

Carcinogenic Category: Not classified as a Carcinogen by the IARC.

Other Carcinogenic Information: Not available.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: This substance may be hazardous to the environment; special attention should be given to crustacean.

Persistence and degradability: Not available.

Mobility: Not available.

Additional Information: Not available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal Methods:

Consult Federal, State and Local regulations for proper disposal/recycle/reclamation note: chemical additions, processing, or otherwise altering this material may make the waste management information presented above incomplete, inaccurate, or otherwise inappropriate.

Special Precautions/Additional Informational:

Not available.

SECTION 14 - TRANSPORT INFORMATION

UN Number: UN2471

UN Proper Shipping Name: Osmium tetroxide

Class and Subsidiary risk: 6.1

Packing Group: PG I

Special Precautions for User: Not available.

Hazchem Code: 3WE

SECTION 15 - REGULATORY INFORMATION

Poison Schedule Number: None Allocated.

SECTION 16 - OTHER INFORMATION

Date of preparation of MSDS: April 11

Comments:

List of Publications referenced when creating this MSDS;

- Hazardous Substances Information System Consolidated Lists: Safe Work Australia.
- APPROVED CRITERIA FOR CLASSIFYING HAZARDOUS SUBSTANCES [NOHSC:1008(2004)] 3rd Edition: National Occupational Health and Safety Commission.
- Dangerous Goods - Initial Emergency Response Guide (SAA/SNZ HB76:1997).
- IATA Dangerous Goods Regulations.
- Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)].

- Australia Standard for the Uniform Scheduling of Drugs and Poisons [SUSPD] (Australian Government Department of Health and Ageing).

This Material Safety Data Sheet (MSDS) has been prepared in compliance with the National code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)]. It is the user's responsibility to determine the suitability of this information for adoption of necessary safety precautions. The information published in this MSDS has been compiled from the publications listed in Section 16: to the best of our ability and knowledge these publications are considered accurate. We reserve the right to revise Material Safety Data Sheets as new information becomes available. Copies may be made for non-profit use.

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