



## MATERIAL SAFETY DATA SHEET

Version Number:- 02

PRODUCT NAME: OSMIUM TETROXIDE

CAS Number: 20816-12-0

**1. IDENTIFICATION:**

**Product Code** : 93524

**Company Name** : ADVENT CHEMBIO PRIVATE LIMITED

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**2. HAZARDS IDENTIFICATION:****Hazard classification****Health hazards**

**Acute toxicity, Oral** : Category 2

**Acute toxicity, Inhalation** : Category 2

**Acute toxicity, Dermal** : Category 1

**Skin Corrosion** : Sub-category 1B

**Serious eye damage** : Category 1

**Labels elements** :**Hazard symbol** :

**Signal word** : Danger

**Hazard statement** : Fatal if swallowed, in contact with skin or if inhaled.  
Causes severe skin burns and eye damage.

**Precautionary statement**

**Prevention** : Obtain special instructions before use.  
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not handle until all safety precautions have been read and understood.  
Wear protective gloves/ protective clothing/ eye protection/ face protection.  
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
Keep container tightly closed. Ground/ bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
Use only non-sparking tools. Take precautionary measures against static discharge.

**Response** : IF exposed or concerned: Get medical advice/ attention.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
IF IN Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if



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	present and easy to do. Continue rinsing. IF Inhaled: Remove person to fresh air and keep comfortable for breathing. IF Swallowed: Immediately call a poison center or doctor/physician.
Storage	: Store in a dry & well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Disposal	: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 3. COMPOSITION/ INFORMATION ON INGRADIENTS:

Ingredient	CAS Number	Percent	Hazardous
Osmium Tetroxide	20816-12-0	NLT 99.0%	Yes

## 4. FIRST AID MEASURES:

General information	: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion	: Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation	: Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.
Skin contact	: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.
Eye contact	: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Immediately call in ophthalmologist.
Swallowed	: After swallowing: immediately make victim drink water (two glasses at most).
Most important symptoms/effects, acute and delayed	: The most important known symptoms and effects are described in the labelling.
Indication of immediate medical attention and special treatment needed	: No data available.

## 5. FIRE FIGHTING MEASURES:

## General information

## Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: For this substance/mixture no limitations of extinguishing agents are given.



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<b>Specific hazards arising from the chemical</b>	:	Nature of decomposition products not known. Not combustible. Ambient fire may liberate hazardous vapours.
<b>Special protective equipment and precautions for firefighters</b>		
<b>Special firefighting procedures</b>	:	Fight fire from a protected location. Move containers from fire area if you can do so without risk.
<b>Special protective equipment for fire-fighters</b>	:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. ACCIDENTAL RELEASE MEASURES:**

<b>Personal precautions, protective equipment and emergency procedures</b>	:	Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
<b>Methods and material for containment and cleaning up</b>	:	Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
<b>Notification Procedures</b>	:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
<b>Environmental precautions</b>	:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. HANDLING AND STORAGE:**

<b>Precautions for safe handling</b>	:	Do not handle until all safety precautions have been read and understood. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
<b>Conditions for safe storage, including any incompatibilities</b>	:	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks.

**8. EXPOSURE CONTROLS PERSONAL PROTECTION:**

<b>Appropriate engineering controls</b>	:	No data available
<b>Individual protection measures, such as personal protective equipment</b>		
<b>General information</b>	:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.
<b>Eye/face protection</b>	:	Wear safety glasses with side shields (or goggles).



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Hand protection	:	Chemical resistant gloves.
Other	:	Wear suitable protective clothing.
Respiratory protection	:	Recommended Filter type: Filter B-(P3)
Hygiene measures	:	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	:	Yellow to yellow-green powder or crystals.
Odor	:	No data available
Solubility	:	No data available
Formula	:	OsO <sub>4</sub>
Molecular Weight	:	254.23 g/mol
Density	:	No data available
pH	:	No data available
% Volatiles by volume @ 21C (70F)	:	No data available
Boiling Point	:	130°C
Melting Point	:	41.0 - 42.0°C
Flash Point	:	No data available
Vapor Density (Air=1)	:	No data available
Vapor Pressure (mm Hg)	:	No data available
Evaporation Rate (BuAc=1)	:	No data available

## 10. STABILITY AND REACTIVITY:

Reactivity	:	No data available
Chemical stability	:	Material is stable under ambient conditions..
Possibility of hazardous reactions	:	Violent reactions possible with: Reducing agents, combustible substances. Fats.
Conditions to avoid	:	No data available
Incompatible materials	:	Aluminum, various metals
Hazardous decomposition products	:	In the event of fire: see section 5



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**11. TOXICOLOGICAL INFORMATION:**

## Information on toxicological effects

## Acute toxicity (list all possible routes of exposure)

Oral Product	: LD50 Oral - Rat - 15 mg/kg
Dermal Product	: Dermal – 5.1 mg/kg
Inhalation Product	: LCLo Inhalation - Rat - 4 h – 0.42 mg/l
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: No data available.
Serious eye damage/eye irritation Product	: No data available.
Respiratory or skin sensitization Product	: No data available.
Carcinogenicity Product	: No data available.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	: No data available.
US. National Toxicology Program (NTP) Report on Carcinogens	: No data available.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050	: No data available.
Germ cell mutagenicity	: No data available.
Reproductive toxicity Product	: No data available.
Specific target organ toxicity - single exposure Product	: No data available.
Specific target organ toxicity - repeated exposure Product	: No data available.
Aspiration hazard Product	: No data available.
Other effects	: No data available.
Additional Information	: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea



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**12. ECOLOGICAL INFORMATION:****Ecotoxicity****Acute hazards to the aquatic environment**

**Fish Product** : No data available.

**Aquatic invertebrates Product** : No data available.

**Chronic hazards to the aquatic environment**

**Fish Product** : No data available.

**Aquatic invertebrates Product** : No data available.

**Toxicity to Aquatic Plants Product:** : No data available.

**Persistence and degradability**

**Biodegradation Product** : No data available.

**BOD/COD ratio Product** : No data available.

**Bioaccumulative potential**

**Bioconcentration factor (BCF) Product** : No data available.

**Partition coefficient n-octanol / water (log Kow) Product** : No data available.

**Mobility in soil** : No data available.

**Other adverse effects** : No data available.

**13. DISPOSAL CONSIDERATION:**

**Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.

**Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.



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## 14. TRANSPORT INFORMATION:

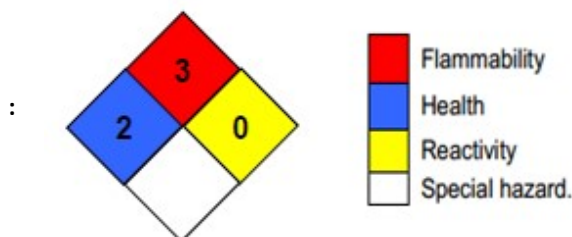
	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR/RID	UN 2471	Osmium Tetroxide	6.1	I	Yes
IMDG	UN 2471	Osmium Tetroxide	6.1	I	Yes
IATA	UN 2471	Osmium Tetroxide	6.1	I	No

## 15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.  
Safety, health and environmental regulations/legislation specific for the substance or mixture  
No Data Available.

## 16. OTHER INFORMATION:

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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