

Osmium Tetroxide

Chemical name	Osmium tetroxide
Synonyms	OsO ₄
CAS number	20816-12-0
EINECS Number	244-058-7
Revision Number	1-2024

Chemical identification and uses

Osmium tetroxide (OsO₄) is a highly toxic and volatile compound primarily used in laboratory settings for staining biological samples and in organic synthesis as an oxidizing agent. It appears as a colorless to pale yellow solid with a distinctive unpleasant odor.

Potential exposures

Exposure to osmium tetroxide can occur in both industrial/manufacturing facilities and laboratory environments. Workers may be exposed primarily through:

- Inhalation of vapors or dust
- Skin contact
- Eye contact

Adherence to stringent safety measures and industrial hygiene practices is crucial to prevent or minimize exposure.

Human Health hazards

- Acute toxicity: Fatal if swallowed, in contact with skin, or if inhaled.
- Skin and eye irritation: Causes severe skin burns and eye damage.
- Carcinogenicity: Not classified as a carcinogen by NTP, IARC, or OSHA.
- ACGIH has set up a Time Weighted Average of 0.0002 ppm

Immediate medical attention is required in case of exposure.

This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information on the chemical is available through the applicable Material Safety Data Sheet which should be consulted before use of the chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents. Statements concerning use of our products are made without warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.



Product Stewardship Summary

Environmental Health hazards

- Aquatic toxicity: Should not be released into the environment; harmful to marine life.
- Biodegradability: Not applicable to inorganic substances.
- Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer systems.

For more detailed safety and regulatory information, please refer to the Safety Data Sheet (SDS) or contact Honeywell at ESSPSCustomerCare@Honeywell.com. Additional information can also be found on PubChem.

- [Osmium Tetroxide | O4Os | CID 30318 - PubChem](#)

This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information on the chemical is available through the applicable Material Safety Data Sheet which should be consulted before use of the chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents. Statements concerning use of our products are made without warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.