

SAFETY DATA SHEET

Version Number: 6

Revision Date: 12 Feb 2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: Osmium tetroxide
Product Code: CMG - 14008
CAS No: 20816-12-0
REACH Registration No: Not applicable, substance is exempt from registration.

1.2 Relevant identified use for the substance or mixture and uses advised against

Laboratory Chemical, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

MANUFACTURER: Ceimig Limited
ADDRESS: Units 1 – 3 Smeaton Road
Wester Gourdie Industrial Estate
DUNDEE
DD2 4UT
Telephone: + 44 (0) 1382 624127
Fax: + 44 (0) 1382 611777
E-mail address: info@ceimig.com

1.4 Emergency Telephone Number

Telephone: + 44 (0) 1382 624127
The above telephone number is only available during office hours of 9am to 5pm (UK Time)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (EU-GHS/CLP)

Acute toxicity, Oral (Category 2)
Acute toxicity, Inhalation (Category 1)
Acute toxicity, Dermal (Category 2)
Skin corrosion (Category 1B)
Respiratory sensitization (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Causes burns. Very toxic by inhalation, in contact with skin and if swallowed.

2.2 Label Elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Pictogram



Signal Word

Danger

Hazard Statement(s)

H300	Fatal if swallowed
H310	Fatal in contact with skin
H314	Causes severe skin burns and eye damage
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary Statement(s)

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P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray
P264	Wash hands thoroughly after handling
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P284	Wear respiratory protection
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P350	IF ON SKIN: Gently wash with plenty of soap and water

Supplemental Hazard Statement(s) none

According to EU Directive 67/548/EEC as amended

Hazard Symbol(s)



R-phrases(s)
R26/27/28
R34
Very toxic by inhalation, in contact with skin and if swallowed
Causes burns

S-phrases(s)
S7/9
S26
S45
Keep container tightly closed and in a well-ventilated place
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

2.3 Other Hazards

Lachrymator

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms Osmic Acid, Osmium (VIII) oxide

Formula O₄Os
Molecular Weight 254.23 g/mol

Component	Concentration
Osmic Acid	
CAS No: 20816-12-0	n/a
EC No: 244-058-7	
Index No: 076-001-00-5	

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Consult a physician. Show this SDS to the physician in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Contact a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed



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Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin, cough, shortness of breath, headache and nausea

4.3 Indication of any immediate medical attention and special treatment needed

no data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray, alcohol resistant foam, dry chemical or carbon dioxide

5.2 Special Hazards arising from the substance or mixture

Nature of decomposition products not known.

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel, Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For exposure control see section 8. For disposal see section 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dusts and aerosols. Provide appropriate exhaust ventilation at places where dust is formed

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

no data available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Basis
Osmic Acid	20816-12-0	STEL	0.0006 ppm 0.006 mg/m ³	UK. EH40 WEL – Workplace exposure limits

8.2 Exposure Controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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Eye Protection

Face Shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin and body protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU directive 89/686/EEC and the standard EN 374 derived from it. Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: solid, Colour: yellow
b) Odour	unpleasant
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	Melting point/range: 39.5 – 41 °C - lit
f) Initial boiling point and boiling range	130 °C - lit
g) Flash point	not applicable
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/Lower flammability or explosive limits	no data available
k) Vapour pressure	69 hPa at 55°C 9 hPa at 20°C
l) Vapour density	no data available
m) Relative density	4.900 g/cm ³
n) Solubility	no data available
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available
t) Oxidising properties	no data available

9.2 Other information

no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

no data available

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong reducing agents, Organic materials, Powdered metals, contact with Hydrochloric acid will cause formation of poisonous chlorine gas

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no data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects**Acute toxicity**

no data available

Skin corrosion/Irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin Sensitisation

May cause allergic respiratory reaction

Germ cell mutagenicityGenotoxicity in vitro – Hamster – Embryo
Unscheduled DNA Synthesis**Carcinogenicity**IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed
Human carcinogen by IARC**Reproductive toxicity**

Reproductive toxicity – mouse-subcutaneous

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count)

Paternal Effects: Testes, epididymis, sperm duct

Specific target organ toxicity – single exposure

no data available

Specific target organ toxicity – repeated exposure

no data available

Aspiration hazard

no data available

Potential Health Effects**Inhalation**

May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion

May be fatal if swallowed. Causes burns.

Skin

May be fatal if absorbed through skin. Causes skin burns.

Eyes

Causes eye burns.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, Shortness of breath, Headache, Nausea.

Additional Information

RTECS#: RN1140000

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

no data available

12.2 Persistence and degradability

no data available

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12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Contact a licensed waste disposal professional to dispose of any excess material. The material is to be disposed of as hazardous waste.

Contaminated packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID
UN2471

IMDG
UN2471

IATA
UN2471

14.2 UN proper shipping name

ADR/RID
OSMIUM TETROXIDE

IMDG
OSMIUM TETROXIDE

IATA
Osmium tetroxide

14.3 Transport hazard class(es)

ADR/RID
Class 6.1

IMDG
Class 6.1

IATA
Class 6.1

14.4 Packing Group

ADR/RID
Packing Group I

IMDG
Packing Group I

IATA
Packing Group I

14.5 Environmental Hazards

ADR/RID
No

IMDG
Marine Pollutant: Yes

IATA
No

14.6 Special Precautions for user

no data available

SECTION 15: REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment

no data available

SECTION 16: OTHER INFORMATION

Further 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



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