

# Sulphuric Acid (Fuming) Oleum



## Section 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Product name:	Sulphuric Acid (Fuming) Oleum
CAS Number:	7664-93-9/8014-95-7
EC Number:	231-639-5

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use: Laboratory chemicals, manufacture of substances

### 1.3 Details of the supplier of the safety data sheet

Company name:	East Harbour Group Ltd Miranda House, The Quay Harwich, Essex, CO12 3HH United Kingdom
Telephone:	+44 (0) 333 242 0100
Email:	<a href="mailto:info@eastharbourgroup.com">info@eastharbourgroup.com</a>

### 1.4 Emergency telephone number

Emergency telephone:	0800 246 1274
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## Section 2: Hazardous identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008/EC

CLP Classification: The product is classified as hazardous in accordance with Directive 1272/2008/EEC

Skin Corr. 1A H314

Eye Dam. 1 H318

STOT SE 3 H335

Classification: The product is classified as dangerous in accordance with Directive 67/548/EEC.

C; R35

Xi; R37

R14

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## 2.2 Label elements

### CLP Pictograms



**Signal word:** Danger

**Hazard statements (CLP):** H314 - Causes severe skin burns and eye damage.

H335 - May cause respiratory irritation.

**Precautionary statements (CLP):** P260 - Do not breathe vapour.

P264 - Wash skin thoroughly after handling.

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER or doctor/ physician. P501 - Dispose of contents/ container to an approved waste disposal plant.

EUH phrases: EUH014 - Reacts violently with water

## Section 3: Composition/information on ingredients

### 3.2 Mixtures

CAS #	Content (W/W)	Ingredients	Classification according to Directive 67/548/EEC
7446-11-9	20-65	Sulphur trioxide	C; R35 Xi; R37 R14
7664-93-9	50	Sulfuric acid	C; R35
CAS #	Content (W/W)	Ingredients	Classification according to Regulation (EC) No. 1272/2008 [CLP]
7446-11-9	20-65	Sulphur trioxide	Skin Corr. 1A H314 STOT SE 3, H335
7664-93-9	50	Sulfuric acid	Skin Corr. 1A, H314



# Sulphuric Acid (Fuming) Oleum

## Section 4: First aid measures

### 4.1 Description of first aid measures

**In case of skin contact:** Take off all contaminated clothing immediately. Rinse immediately with plenty of water for 15 minutes. Call a physician immediately. Remove and wash contaminated clothing before re-use. Discard contaminated shoes.

**In case of eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

**If swallowed:** Rinse mouth with water. Drink plenty of water. Do NOT induce vomiting. Call a physician immediately.

**If inhaled:** Move the victim to fresh air. In case of shortness of breath, give oxygen. If not breathing, give artificial respiration. Do not apply mouth-to-mouth resuscitation. Call a physician immediately. Symptoms may be delayed.

### 4.2 Most important symptoms and effects, both acute and delayed

**Inhalation:** Inhaled corrosive substances can lead to a toxic oedema of the lungs.

**Skin contact:** Causes severe burns. Corrosive to skin.

**Eye contact:** Causes severe burns. Corrosive - causes irreversible eye damage.

**Ingestion:** Causes severe burns.

## Section 5: Fire-fighting measures

### 5.1 Fire Fighting Media and Instructions:

Suitable extinguishing media: Foam, dry powder, carbon dioxide (CO<sub>2</sub>). Use water spray to cool unopened containers.

Unsuitable extinguishing media: High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Non flammable

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. The pressure in sealed containers can increase under the influence of heat. Contact with metals liberates hydrogen gas. May form explosive mixtures in air. Possible decomposition products are: SO<sub>x</sub>, corrosive fumes. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### 5.3 Advice for firefighters

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus. In the event of fire, cool tanks with water spray.



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## Section 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Ensure adequate ventilation. Evacuate personnel to safe areas. Wear suitable protective equipment. See also section 8. Avoid contact with skin, eyes, and clothing. Do not breathe vapours or spray mist.

Advice for emergency responders: Only qualified personnel equipped with suitable protective equipment may intervene.

### 6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Contain spillage, soak up with non-combustible absorbent material, (e.g., sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Use neutralizing agents: Sodium carbonate, Sodium bicarbonate, Sodium hydroxide. Collect and dispose of waste product at an authorised disposal facility. After cleaning, flush away traces with water.

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

**Handling:** Ensure adequate ventilation. Wear personal protective equipment. See also section 8. Avoid contact with skin, eyes, and clothing. Do not breathe vapours or spray mist. Do not breathe fumes. When diluting, always add the product to water. Never add water to the product. See also section 10. Keep away from open flames, hot surfaces, and sources of ignition. Electrical equipment should be protected to the appropriate standard. Take care to avoid waste and spillage when weighing, loading, and mixing the product. Do not let product enter drains. Take any precaution to avoid mixing with incompatible materials. Always replace cap after use.

**Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink, or smoke. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Keep working clothes separately.

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage:** Keep containers tightly closed in a dry, cool, and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10. Keep away from combustible materials. Keep away from direct sunlight. Keep away from open flames, hot surfaces, and sources of ignition. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Strongly hygroscopic! Store according to local/national regulations.

**Packaging materials:** Store in original container



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## Section 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Exposure limit(s)

**Component:** Sulphur trioxide (7446-11-9)

TLV-TWA (mg/m<sup>3</sup>): 1 (PL)

TLV-STEL (mg/m<sup>3</sup>): 3 (PL)

**Component:** Sulfuric acid (7664-93-9)

TLV-TWA (mg/m<sup>3</sup>): 1 (Belgium, France, Czech Republic, Sweden, Croatia, Spain, Croatia, Latvia, Greece, Austria, Denmark); 0,2 (Finland, Portugal); 0,1 (Slovenia, Norway, Switzerland)

TLV-STEL (mg/m<sup>3</sup>): 3 (France, Belgium, Sweden, Spain, Polish, Croatia); 2 (Czech Republic, Austria); 1 (Finland); 0,1 (Switzerland)

**Recommended monitoring procedures:** Personal monitoring, Concentration measurement in air

### 8.2 Exposure controls

**Personal protective equipment:** The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** In case of insufficient ventilation wear suitable respiratory equipment. Respirator with a full-face mask (EN136). Recommended Filter type: ABEK (EN141). If there is a risk of oxygen deficiency, use appropriate pressurised breathing protection (EN138/269 - EN137 - EN139).

**Hand protection:** Protective gloves complying with EN 374: Viton (R), PVC. Request information on glove permeation properties from the glove supplier. The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.

**Eye protection:** Tightly fitting safety goggles (EN166). If splashes are likely to occur, wear: Respirator with a full-face mask.

**Skin and body protection:** Acid-resistant protective clothing.

**Thermal hazard protection:** Not required under normal use. Use dedicated equipment.

**Engineering measures:** Closed system. Ensure adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Ensure that eyewash stations and safety showers are close to the workstation location. Eye wash bottle with pure water. Organisational measures to prevent /limit releases, dispersion and exposure See also section 7.

**Environmental exposure controls:** Do not flush into surface water or sanitary sewer system. Comply with applicable Community environmental protection legislation.



# Sulphuric Acid (Fuming) Oleum

## Section 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	Colourless liquid
<b>Odor</b>	Pungent
<b>pH</b>	<1
<b>Melting Point/Range</b>	-15- 10 C
<b>Boiling Point/Range</b>	126-127 C
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Explosion Limits</b>	No information available
<b>Vapor Pressure</b>	0,0048 bar (30% SO <sub>3</sub> )
<b>Vapor Density</b>	3,2 (30% SO <sub>3</sub> )
<b>Density</b>	1,88-1,92 g/ml @30 C (20%-30% SO <sub>3</sub> )
<b>Water Solubility</b>	Completely soluble
<b>Solubility in other solvents</b>	No information available
<b>Partition Coefficient</b>	No information available
<b>Viscosity</b>	10 mPa.s @ 60 C (20% SO <sub>3</sub> )
<b>Auto-ignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available

## Section 10: Stability and Reactivity

<b>10.1 Reactivity</b>	See above
<b>10.2 Chemical Stability</b>	Strongly hygroscopic
<b>10.3 Possibility of hazardous reactions</b>	Heating can release hazardous gases: Sulphur oxides. Gives off hydrogen by reaction with metals. Vapours may form explosive mixtures with air. Violent exothermic reaction with (some) bases. Reacts violently with water.
<b>10.4 Conditions to avoid</b>	Avoid moisture. Keep away from open flames, hot surfaces and sources of ignition. Decomposes on heating. See also section 7: Handling and storage.
<b>10.5 Incompatible materials</b>	Metals, organic materials, nitrates, bases, water.
<b>10.6 Hazardous decomposition products</b>	Contact with metals liberates hydrogen gas. Vapours may form explosive mixture with air. Burning produces noxious and toxic fumes: Sulphur oxides.





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## Section 11: Toxicological Information

### Product Information

#### 11.1 Toxicological effects:

Acute toxicity: Not classified due to data which are conclusive although insufficient for classification

Sulphur trioxide

LD50/oral/rat: 2140 mg/kg Read across (Analogy)

LC50/inhalation/4h/rat: 375 mg/m<sup>3</sup>

Sulfuric acid

LD50/oral/rat: 2140 mg/kg

LC50/inhalation/4h/rat: 0,375 (aerosol) mg/l/4h

Skin corrosion/irritation: Causes severe skin burns and eye damage. pH: < 1

Serious eye damage/irritation: Causes serious eye damage. pH: < 1

Respiratory or skin sensitisation: Not classified (Not classified due to data which are conclusive although insufficient for classification.)

Germ cell mutagenicity: Not classified (Not classified due to data which are conclusive although insufficient for classification.)

Carcinogenicity: Not classified (Not classified due to data which are conclusive although insufficient for classification.)

Reproductive toxicity: Not classified (Not classified due to data which are conclusive although insufficient for classification.)

Specific target organ toxicity (single exposure): May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): Not classified (Not classified due to data which are conclusive although insufficient for classification.)

Aspiration hazard: Not classified (Not classified due to data which are conclusive although insufficient for classification.)

## Section 12: Ecological Information

### 12.1 Toxicity

#### Ecotoxicity effects

High concentration in receiving water will injure aquatic life by pH effect

Sulphur trioxide: LC50/96h/fish: 16mg/l Read across (Analogy)

Sulfuric acid: LC50/96h/fish: 16-28 (Lepomis macrochirus) mg/l

Not readily biodegradable.

Bioaccumulation: low potential

Partition coefficient: n-octanol/water: not applicable

Mobility: hydrolysis. Mobile in soils.



## Sulphuric Acid (Fuming) Oleum

### Section 13: Disposal considerations

#### 13.1 Waste treatment methods

Waste from residues / unused products: Do not flush into surface water or sanitary sewer system. Handle with care. See also section 7: Handling and storage. Collect and dispose of waste product at an authorised disposal facility. Dispose of in accordance with local regulations.

Contaminated packaging: Container remains hazardous when empty. Continue to observe all precautions.

Dispose of in accordance with local regulations.

Codes of waste (2001/573/EC, 75/442/EEC, 91/689/EEC): Classified as hazardous waste according to European Union regulations. 060100 - wastes from the manufacture, formulation, supply and use (MFSU) of acids.

### Section 14: Transport Information

UN Number: 1831

UN Proper Shipping Name: SULPHURIC ACID, FUMING

UN Proper Shipping Name IATA/IMDG: SULPHURIC ACID, FUMING

Overland transport Class: 8 - Corrosive substances

Hazard identification number (Kemler No.): X886

Classification code: CT1

ADR/RID-Labels: 8 – Corrosive substances

6.1 – Toxic substances

Inland waterway transport (AND/ADNR)

Class (ADNR): 8

Transport by sea

Class: 8 – Corrosive substances

Air transport

Class: 8 – Corrosive substances

Packing group: I

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

### Section 15: Regulatory Information

#### EU-Regulations

Authorisations/Restrictions on use: Not applicable. This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC.: None.





# Sulphuric Acid (Fuming) Oleum

## National regulations

WGK: 1

## Section 16: Other Information

### Full text of phrases

Eye Dam. 1: Serious eye damage/eye irritation Category 1

Skin Corr. 1A: skin corrosion/irritation Category 1A

STOT SE 3: Specific target organ toxicity (single exposure) Category 3

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

R14: Reacts violently with water.

R35: Causes severe burns.

R37: Irritating to respiratory system.

