

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

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## Silver Oxide, Lab Grade

### SECTION 1: Identification of the substance/mixture and of the supplier

**Product name:** Silver Oxide, Lab Grade

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** S25528

**Recommended uses of the product and restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific, Inc  
9 Barnhart Drive, Hanover, PA 17331  
(717) 632-1291

**Supplier Details:**

Fisher Science Education  
6771 Silver Crest Road, Nazareth, PA 18064  
(724)517-1954

**Emergency telephone number:**

**Fisher Science Education**  
Emergency Telephone No.: 800-535-5053

### SECTION 2: Hazards identification

**Classification of the substance or mixture:**



**Oxidizing**  
Oxidizing solids, category 2



**Irritant**  
Skin irritation, category 2



**Corrosive**  
Serious eye damage, category 1



**Environmentally Damaging**  
Acute hazards to the aquatic environment, category 1  
Chronic hazards to the aquatic environment, category 1

Ox. Sol. 2.  
Skin Irrit. 2.  
Eye Dam. 1.  
Aq AcTox 1.  
Aq ChTox 1.  
Hazards Not Otherwise Classified - Combustible Dust.

**Signal word:** Danger

**Hazard statements:**

May intensify fire; oxidizer.  
Causes skin irritation.  
Causes serious eye damage.  
Very toxic to aquatic life.

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Very toxic to aquatic life with long lasting effects.

### Precautionary statements:

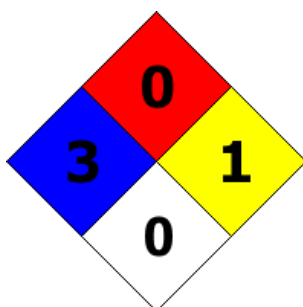
If medical advice is needed, have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Keep/Store away from clothing/combustible materials.  
Take any precaution to avoid mixing with combustibles.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Wash skin thoroughly after handling.  
Avoid release to the environment.  
Use personal protective equipment as required.  
Do not eat, drink or smoke when using this product.  
In case of fire: Use agents recommended in section 5 for extinction.  
Specific treatment (see supplemental first aid instructions on this label).  
Take off contaminated clothing and wash before reuse.  
IF ON SKIN: Wash with soap and water.  
If skin irritation occurs: Get medical advice/attention.  
Immediately call a POISON CENTER or doctor/physician.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.  
Continue rinsing.  
Collect spillage.  
Store in a dry place.  
Dispose of contents and container to an approved waste disposal plant.

### Other Non-GHS Classification:

#### WHMIS



#### NFPA/HMIS



NFPA SCALE (0-4)

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	X

HMIS RATINGS (0-4)

### SECTION 3: Composition/information on ingredients

#### Ingredients:

CAS 20667-12-3

Silver Oxide

>95 %

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Percentages are by weight

### SECTION 4: First aid measures

#### Description of first aid measures

##### After inhalation:

Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

##### After skin contact:

Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

##### After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

##### After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists. Never give anything by mouth to an unconscious person.

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

Irritation. Nausea. Headache. Shortness of breath.

#### Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Physician should treat symptomatically.

### SECTION 5: Firefighting measures

#### Extinguishing media

##### Suitable extinguishing agents:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

**Unsuitable extinguishing agents:** None

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

Oxygen, silver fumes. Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors.

#### Advice for firefighters:

##### Protective equipment:

Use NIOSH-approved respiratory protection/breathing apparatus.

##### Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use spark-proof tools and explosion-proof equipment. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

### SECTION 6: Accidental release measures

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

Wear protective equipment. Use spark-proof tools and explosion-proof equipment. Ensure that air-handling systems are operational. Ensure adequate ventilation.

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### Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into environment.

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

Keep in suitable closed containers for disposal. Wear protective eyewear, gloves, and clothing. Refer to Section 8. Always obey local regulations. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect solids in powder form using vacuum with (HEPA filter). Evacuate personnel to safe areas.

Reference to other sections: None

## SECTION 7: Handling and storage

### Precautions for safe handling:

Minimize dust generation and accumulation. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with eyes, skin, and clothing.

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

Store away from incompatible materials. Protect from freezing and physical damage. Keep away from food and beverages. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store in cool, dry conditions in well sealed containers. Store with like hazards.

## SECTION 8: Exposure controls/personal protection



### Control Parameters:

, , OSHA PEL TWA (Total Dust) 15 mg/m<sup>3</sup> (50 mppcf\*).  
, , ACGIH TLV TWA (inhalable particles) 10 mg/m<sup>3</sup>.

### Appropriate Engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use under a fume hood.

### Respiratory protection:

When necessary use NIOSH approved breathing equipment.

### Protection of skin:

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

### Eye protection:

Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.

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**General hygienic measures:** Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

### SECTION 9: Physical and chemical properties

<b>Appearance (physical state, color):</b>	Brown - black solid	<b>Explosion limit lower:</b>	Not Determined
		<b>Explosion limit upper:</b>	Not Determined
<b>Odor:</b>	Odorless	<b>Vapor pressure at 20°C:</b>	Not Determined
<b>Odor threshold:</b>	Not Determined	<b>Vapor density:</b>	Not Determined
<b>pH-value:</b>	Not Determined	<b>Relative density:</b>	7.14
<b>Melting/Freezing point:</b>	Not Determined	<b>Solubilities:</b>	Molecular Weight: 231.76.
<b>Boiling point/Boiling range:</b>	Not Determined	<b>Partition coefficient (n-octanol/water):</b>	Not Determined
<b>Flash point (closed cup):</b>	Not Determined	<b>Auto/Self-ignition temperature:</b>	Not Determined
<b>Evaporation rate:</b>	Not Determined	<b>Decomposition temperature:</b>	Not Determined
<b>Flammability (solid, gaseous):</b>	Not Determined	<b>Viscosity:</b>	a. Kinematic: Not Determined b. Dynamic: Not Determined
<b>Density at 20°C:</b>	Not Determined		

### SECTION 10: Stability and reactivity

**Reactivity:**

Nonreactive under normal conditions.

**Chemical stability:**

Stable. Absorbs carbon dioxide from the air.

**Possible hazardous reactions:**

None under normal processing.

**Conditions to avoid:**

Incompatible materials, combustible materials, organic materials, reducing agents.

**Incompatible materials:**

ammonia. Grinding silver oxide with metal sulfides, selenium, sulfur, or phosphorus can cause ignition. Hydrogen sulfide. hydrazines, amines, sulfur, metal sulfides, and carbon monoxide.

**Hazardous decomposition products:**

Oxygen, silver fumes.

### SECTION 11: Toxicological information

**Acute Toxicity:**

**Oral:**

2820 mg/kg LD50 rat:

**Chronic Toxicity:** No additional information.

**Corrosion Irritation:** No additional information.

**Sensitization:** No additional information.

**Numerical Measures:** No additional information.

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**Carcinogenicity:** No additional information.

**Mutagenicity:** No additional information.

**Reproductive Toxicity:** No additional information.

### SECTION 12: Ecological information

**Ecotoxicity:** No additional information.

**Persistence and degradability:** No additional information.

**Bioaccumulative potential:** No additional information.

**Mobility in soil:** No additional information.

**Other adverse effects:** No additional information.

### SECTION 13: Disposal considerations

#### Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

### SECTION 14: Transport information

#### US DOT

##### UN Number:

ADR, ADN, DOT, IMDG, IATA

3085

##### Limited Quantity Exception:

None

##### Bulk:

**RQ (if applicable):** None

**Proper shipping Name:** OXIDIZING SOLID,  
Corrosive, N.O.S.

**Hazard Class:** 8

**Packing Group:** II.

**Marine Pollutant (if applicable):** No  
additional information.

**Comments:** None

##### Non Bulk:

**RQ (if applicable):** None

**Proper shipping Name:** OXIDIZING SOLID,  
Corrosive, N.O.S.

**Hazard Class:** 8

**Packing Group:** II.

**Marine Pollutant (if applicable):** No  
additional information.

**Comments:** None



### SECTION 15: Regulatory information

#### United States (USA)

##### SARA Section 311/312 (Specific toxic chemical listings):

Reactive, Acute

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#### SARA Section 313 (Specific toxic chemical listings):

20667-12-3 Silver Oxide.

#### RCRA (hazardous waste code):

None of the ingredients are listed.

#### TSCA (Toxic Substances Control Act):

All ingredients are listed.

#### CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients are listed.

#### Proposition 65 (California):

##### Chemicals known to cause cancer:

None of the ingredients are listed.

##### Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

##### Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

##### Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

#### Canada

##### Canadian Domestic Substances List (DSL):

All ingredients are listed.

##### Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients are listed.

##### Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients are listed.

### SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

**GHS Full Text Phrases:** None

#### Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.

PNEC Predicted No-Effect Concentration (REACH).

CFR Code of Federal Regulations (USA).

SARA Superfund Amendments and Reauthorization Act (USA).

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RCRA Resource Conservation and Recovery Act (USA).  
TSCA Toxic Substances Control Act (USA).  
NPRI National Pollutant Release Inventory (Canada).  
DOT US Department of Transportation.  
IATA International Air Transport Association.  
GHS Globally Harmonized System of Classification and Labelling of Chemicals.  
ACGIH American Conference of Governmental Industrial Hygienists.  
CAS Chemical Abstracts Service (division of the American Chemical Society).  
NFPA National Fire Protection Association (USA).  
HMIS Hazardous Materials Identification System (USA).  
WHMIS Workplace Hazardous Materials Information System (Canada).  
DNEL Derived No-Effect Level (REACH).

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