

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name OXPHO BLUE LIQUID, 4 OZ.
Version # 01
Issue date 03-07-2014
CAS # Mixture
Product code 082-024-004
Manufacturer information BROWNELLS, INC.
200 South Front Street
Montezuma, Iowa 50171 United States
www.brownells.com
(641) 623-5401
24 hour Emergency Number, (352)-323-3500

2. Hazards Identification

Emergency overview DANGER

Corrosive. Causes skin and eye burns. Cancer hazard. Irritating to respiratory system. Prolonged exposure may cause chronic effects.

OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Eyes Causes eye burns. Risk of serious damage to eyes. Do not get this material in contact with eyes.

Skin Causes skin burns. Do not get this material in contact with skin.

Inhalation Causes burns. Irritating to respiratory system. May cause cancer by inhalation. Do not breathe dust/fume/gas/mist/vapors/spray.

Ingestion Components of the product may be absorbed into the body by ingestion. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract. Do not ingest.

Target organs Eyes. Respiratory system. Skin.

Potential environmental effects Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|--|-----------|----------|
| COPPER (II) SULFATE PENTAHYDRATE (1:1:5) | 7758-99-8 | 2.5 - 10 |
| PHOSPHORIC ACID | 7664-38-2 | 2.5 - 10 |
| NICKEL SULFATE | 7786-81-4 | 1 - 2.5 |
| SELENOUS ACID | 7783-00-8 | 1 - 2.5 |

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Skin contact Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.

Inhalation Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Ingestion Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Notes to physician In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General advice Immediate medical attention is required. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties The product is not flammable. No unusual fire or explosion hazards noted.

Extinguishing media

Suitable extinguishing media Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Fire fighting equipment/instructions Not available.

6. Accidental Release Measures

Personal precautions Keep unnecessary personnel away. Keep upwind.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up Small Spills: Wipe up with absorbent material (e.g. cloth, fleece).

Never return spills in original containers for re-use.

7. Handling and Storage

Handling Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not use in areas without adequate ventilation. Wash thoroughly after handling. Handle and open container with care.

Storage Keep container tightly closed. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|---------------------------------|------|---------------------|
| PHOSPHORIC ACID (CAS 7664-38-2) | STEL | 3 mg/m ³ |
| | TWA | 1 mg/m ³ |

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value |
|---------------------------------|------|---------------------|
| PHOSPHORIC ACID (CAS 7664-38-2) | PEL | 1 mg/m ³ |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|---------------------------------|------|---------------------|
| PHOSPHORIC ACID (CAS 7664-38-2) | REL | 1 mg/m ³ |
| | STEL | 3 mg/m ³ |

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection Do not get in eyes. Chemical goggles are recommended. Face-shield.

Skin protection

Do not get this material in contact with skin. Do not get this material on clothing. Wear chemical protective equipment that is specifically recommended by the manufacturer. Wear appropriate chemical resistant clothing. It may provide little or no thermal protection. Structural firefighters protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations. Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Chemical resistant gloves.

Respiratory protection

Do not breathe dust/fume/gas/mist/vapors/spray.

General hygiene considerations

Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. When using, do not eat, drink or smoke. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

| | |
|---|--------------------------|
| Appearance | Clear. Blue. Liquid. |
| Physical state | Liquid. |
| Form | Liquid. |
| Color | Clear. Blue. |
| Odor | Odorless. |
| Odor threshold | Not available. |
| pH | 1.5 |
| Vapor pressure | 0.00103221 hPa estimated |
| Vapor density | Not available. |
| Boiling point | > 213 °F (> 100.56 °C) |
| Solubility (water) | Not available. |
| Specific gravity | 1.007 |
| Relative density | Not available. |
| Flash point | Not available. |
| Flammability limits in air, upper, % by volume | Not available. |
| Flammability limits in air, lower, % by volume | Not available. |
| Auto-ignition temperature | Not available. |
| Evaporation rate | < 1 |

10. Chemical Stability & Reactivity Information

| | |
|---|--|
| Chemical stability | Material is stable under normal conditions. |
| Conditions to avoid | Excessive heat. |
| Incompatible materials | Cyanides, water-reactive substances, strong reducing agents, chlorinated cleaners or sanitizers, combustible organic materials, most metals. |
| Hazardous decomposition products | Reaction with organics and strong reducing agents can produce organoselenides and hydrogen selenide. Thermal decomposition may produce selenium, phosphoric and copper oxides. |
| Possibility of hazardous reactions | Hazardous polymerization does not occur. |

11. Toxicological Information**Toxicological data**

| Product | Species | Test Results |
|--|----------------|--------------------------|
| OXPHO BLUE LIQUID, 4 OZ. (CAS Mixture) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 54800 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | 15642 mg/kg |
| <i>Other</i> | | |
| LD50 | Rabbit | 266.6667 g/kg, estimated |

| Components | Species | Test Results |
|--|---|----------------------|
| COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8) | | |
| Acute | | |
| <i>Oral</i> | | |
| LD50 | Rat | 960 mg/kg |
| <i>Other</i> | | |
| LD50 | Rabbit | > 8 g/kg > 8 g/kg |
| PHOSPHORIC ACID (CAS 7664-38-2) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 2740 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | 1530 mg/kg |
| Acute effects | Causes burns. | |
| Local effects | Irritating to respiratory system. | |
| Chronic effects | Hazardous by OSHA criteria. Prolonged exposure may cause chronic effects. | |
| Carcinogenicity | Hazardous by OSHA criteria. Cancer hazard. Risk of cancer cannot be excluded with prolonged exposure. | |

ACGIH Carcinogens

NICKEL SULFATE (CAS 7786-81-4)

A1 Confirmed human carcinogen.

A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

NICKEL SULFATE (CAS 7786-81-4)

1 Carcinogenic to humans.

SELENOUS ACID (CAS 7783-00-8)

3 Not classifiable as to carcinogenicity to humans.

US NTP Report on Carcinogens: Known carcinogen

NICKEL SULFATE (CAS 7786-81-4)

Known To Be Human Carcinogen.

Skin corrosion/irritation Hazardous by OSHA criteria.

12. Ecological Information

Ecotoxicological data

| Product | Species | Test Results |
|--|---------|----------------------|
| OXPHO BLUE LIQUID, 4 OZ. (CAS Mixture) | | |
| Crustacea | EC50 | Daphnia |
| | | 4488 mg/l, 48 hours |
| Fish | LC50 | Fish |
| | | 16.91 mg/l, 96 hours |

Ecotoxicity Components of this product are hazardous to aquatic life.

Environmental effects Harmful to aquatic organisms.

Persistence and degradability Not available.

13. Disposal Considerations

Waste codes D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]

US RCRA Hazardous Waste U List: Reference

SELENOUS ACID (CAS 7783-00-8)

U204

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

Waste from residues / unused products Not applicable.

14. Transport Information

General DOT Regulated Marine Pollutant.

DOT**Basic shipping requirements:**

UN number UN3264
Proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Selenious and Phosphoric Acids)
Hazard class 8
Packing group III

IATA

UN number UN3264
UN proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Selenious and Phosphoric Acids)
Transport hazard class(es) 8
Packing group III

IMDG

UN number UN3264
UN proper shipping name Corrosive Liquid, Acidic, Inorganic, N.O.S. (Selenious and Phosphoric Acids)
Transport hazard class(es) 8
Packing group III

DOT**IATA; IMDG****15. Regulatory Information**

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

SELENOUS ACID (CAS 7783-00-8) 10 lbs

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, lower value

SELENOUS ACID (CAS 7783-00-8) 1000 lbs

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, upper value

SELENOUS ACID (CAS 7783-00-8) 10000 lbs

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8) 1.0 % N100
 NICKEL SULFATE (CAS 7786-81-4) 0.1 % N495
 SELENOUS ACID (CAS 7783-00-8) 1.0 % N725

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8) Listed. N100
 NICKEL SULFATE (CAS 7786-81-4) Listed. N495
 SELENOUS ACID (CAS 7783-00-8) Listed. N725

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity

PHOSPHORIC ACID: 5000
 NICKEL SULFATE: 100
 SELENOUS ACID: 10

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical No

Inventory status

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | No |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | No |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

NICKEL SULFATE (CAS 7786-81-4) Listed: May 7, 2004 Carcinogenic.

US - New Jersey RTK - Substances: Listed substance

NICKEL SULFATE (CAS 7786-81-4) Listed.
 PHOSPHORIC ACID (CAS 7664-38-2) Listed.
 SELENOUS ACID (CAS 7783-00-8) Listed.

US. Massachusetts RTK - Substance List

COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8)
 NICKEL SULFATE (CAS 7786-81-4)
 PHOSPHORIC ACID (CAS 7664-38-2)
 SELENOUS ACID (CAS 7783-00-8)

US. Pennsylvania RTK - Hazardous Substances

| | |
|--|---------|
| COPPER (II) SULFATE PENTAHYDRATE (1:1:5) (CAS 7758-99-8) | Listed. |
| NICKEL SULFATE (CAS 7786-81-4) | Listed. |
| PHOSPHORIC ACID (CAS 7664-38-2) | Listed. |
| SELENOUS ACID (CAS 7783-00-8) | Listed. |

US. Rhode Island RTK

NICKEL SULFATE (CAS 7786-81-4)
PHOSPHORIC ACID (CAS 7664-38-2)
SELENOUS ACID (CAS 7783-00-8)

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 3*
Flammability: 1
Physical hazard: 0

NFPA ratings

Health: 3
Flammability: 1
Instability: 0

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This data sheet contains changes from the previous version in section(s):

Product and Company Identification: Alternate Trade Names
Other Information: Disclaimer