

SECTION 1: Identification**1.1. Product identifier**

Product form : Mixture
Product name : PENETROX™ E2 OXIDE INHIBITING COMPOUND

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Copper to copper connections, copper threads, grounding applications

1.4. Supplier's details

Burndy LLC
47 East Industrial Park Drive
Manchester, NH 03109 USA
(603) 647-5000

1.5. Emergency phone number

Emergency number : INFOTRAC: 1-800-535-5053 (U.S. & Canada) / 1-352-323-3500 (Outside the U.S. & Canada)

SECTION 2: Hazard(s) identification**2.1. Classification of the substance or mixture****GHS US classification**

Acute Tox. 4 (Oral) H302
Skin Sens. 1 H317

2.2. Label elements**GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) : H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction

Precautionary statements (GHS US) : P261 - Avoid breathing dust, fume, gas, mist, vapors, spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
P302+P352 - If on skin: Wash with plenty of water.
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice or attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Copper	(CAS-No.) 7440-50-8	10 – 30
2,5-bis(octyldithio)-1,3,4-thiadiazole	(CAS-No.) 13539-13-4	0.1 – 1.5
Proprietary stabilizer	(CAS-No.) Proprietary	0.1 – 1.5

*In accordance with paragraph (i) of the OSHA Hazard Communication Standard (29 CFR §1910.1200), the specific chemical identity or exact weight % has been withheld as a trade secret

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing.
- First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes.
- First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects : May cause an allergic skin reaction. Harmful if swallowed.
- Symptoms/effects after inhalation : May cause respiratory irritation.
- Symptoms/effects after skin contact : May cause an allergic skin reaction.
- Symptoms/effects after eye contact : Direct contact with the eyes is likely to be irritating.
- Symptoms/effects after ingestion : May be harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Carbon dioxide. Dry powder.
- Unsuitable extinguishing media : Water jet.

5.2. Specific hazards arising from the chemical

- Fire hazard : Not flammable.
- Explosion hazard : Product is not explosive.
- Reactivity in case of fire : None known.
- Hazardous decomposition products in case of fire : No information available.

5.3. Special protective equipment and precautions for fire-fighters

- Precautionary measures fire : Eliminate all ignition sources if safe to do so.
- Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Do not dispose of fire-fighting water in the environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Evacuate area. Ventilate area. Keep upwind. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

6.1.1. For non-emergency personnel

- Protective equipment : Wear protective equipment as described in section 8.

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Emergency procedures	: Evacuate unnecessary personnel.
6.1.2. For emergency responders	
Protective equipment	: Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.
6.2. Environmental precautions	
Avoid release to the environment. Prevent entry to sewers and public waters.	
6.3. Methods and material for containment and cleaning up	
For containment	: Contain and collect as any solid. Prevent entry to sewers and public waters.
Methods for cleaning up	: Shovel or sweep up and put in a closed container for disposal. Keep in suitable, closed containers for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.
6.4. Reference to other sections	
See Sections 8 and 13.	

SECTION 7: Handling and storage

7.1. Precautions for safe handling	
Precautions for safe handling	: Do not handle until all safety precautions have been read and understood. Keep container closed when not in use. Avoid all eye and skin contact and do not breathe vapor and mist. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Hygiene measures	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.
7.2. Conditions for safe storage, including incompatibilities	
Storage conditions	: Store in original container. Keep container closed when not in use. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store in a dry, cool and well-ventilated place. Keep out of reach of children.
Incompatible materials	: Oxidizers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Copper (7440-50-8)		
ACGIH	ACGIH® TLV® TWA	0.2 mg/m³ (fume)
ACGIH	Remark (ACGIH®)	TLV® Basis: Irr; GI; metal fume fever
ACGIH	Regulatory reference	ACGIH 2025
OSHA	OSHA PEL TWA	0.1 mg/m³ (fume)
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
IDLH	IDLH	100 mg/m³ (dust, fume and mist)
NIOSH	NIOSH REL (TWA)	1 mg/m³ (dust and mist) 0.1 mg/m³ (fume)
NIOSH	Regulatory reference (US-NIOSH)	OSHA Annotated Table Z-1 (NIOSH Pocket Guide to Chemical Hazards (NPG))
2,5-bis(octyldithio)-1,3,4-thiadiazole (13539-13-4)		
ACGIH	Remark (ACGIH®)	OELs not established
OSHA	Remark (OSHA)	OELs not established
Proprietary stabilizer		
ACGIH	Remark (ACGIH®)	OELs not established
OSHA	Remark (OSHA)	OELs not established

8.2. Appropriate engineering controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas.

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8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment symbol(s):



Personal protective equipment:

Gloves. Protective goggles. [In case of inadequate ventilation] wear respiratory protection.

Hand protection:

Use gloves appropriate to the work environment. Gloves should be classified under Standard EN 374 or ASTM F1296

Eye protection:

Use eye protection suitable to the environment. Avoid direct contact with eyes.

Skin and body protection:

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection:

No respiratory protection needed under normal use conditions. Where excessive vapor, mist, or dust may result, use NIOSH approved respiratory protection equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Paste. Thick grease.
Color	: Copper
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 250 °C (500 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Oxidizing properties	: No data available
Particle characteristics	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

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10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

None under normal use.

10.4. Conditions to avoid

High temperatures, incompatible materials.

10.5. Incompatible materials

Oxidizers.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Copper (7440-50-8)

LD50 oral rat : 300 – 500 mg/kg Source: ECHA

LD50 dermal rat : > 2000 mg/kg Source: ECHA

LC50 Inhalation - Rat : > 5.11 mg/l/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/effects : May cause an allergic skin reaction. Harmful if swallowed.

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/effects after ingestion : May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Ecotoxicity

Ecology - general : Harmful to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Copper (7440-50-8)

LC50 - Fish [1] : < 0.3 mg/l Pimephales promelas (96 hr)

EC50 - Crustacea [1] : 0.03 mg/l Daphnia magna (48 hr)

LC50 - Fish [2] : 0.052 mg/l Oncorhynchus mykiss (96 hr)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : No data available.

Ozone : Not classified

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Fluorinated greenhouse gases : No

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Do not discharge to public wastewater systems without permit of pollution control authorities. No discharge to surface waters is allowed without an NPDES permit.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Transport by sea (IMDG)

Transport document description (IMDG) : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains : Copper), 9, III, MARINE POLLUTANT

UN-No. (IMDG) : 3077

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class (IMDG) : 9 - Miscellaneous dangerous substances and articles

Packing group (IMDG) : III - substances presenting low danger

Limited quantities (IMDG) : 5 kg

Air transport (IATA)

Transport document description (IATA) : UN 3077 Environmentally hazardous substance, solid, n.o.s. (contains : Copper), 9, III

UN-No. (IATA) : 3077

Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.

Class (IATA) : 9 - Miscellaneous Dangerous Substances and Articles

Packing group (IATA) : III - Low danger

SECTION 15: Regulatory information

15.1. US Federal regulations

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All chemical substances in this product are listed as "Active" in the EPA (Environmental Protection Agency) "TSCA Inventory Notification (Active-Inactive) Requirements Rule" ("the Final Rule") of Feb. 2019, as amended Feb. 2021, or are otherwise exempt or regulated by other agencies such as FDA or FIFRA

SARA Section 311/312 Hazard Classes	Health hazard - Acute toxicity (any route of exposure) Health hazard - Respiratory or skin sensitization
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Copper (7440-50-8)

Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	5000 lb
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15.2. International regulations

No additional information available

15.3. US State regulations

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

Component	State or local regulations
Copper (7440-50-8)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Aluminum oxide (1344-28-1)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

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SECTION 16: Other information

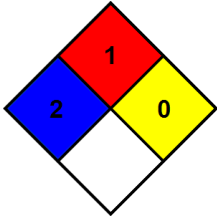
Issue date : 4/06/2026

Other information : Author: JAD.

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS Hazard Rating

Health : 2*

Flammability : 1

Physical : 0

Indication of changes:
Revision 1.0: New SDS Created.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.