

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : PENETROX™ E OXIDE INHIBITING COMPOUND
Product group : Trade product

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

Relevant identified uses

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

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the model Work Health and Safety Regulations (WHS Regulations) and GHS

Acute toxicity (oral), Category 4	H302
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according according to the model Work Health and Safety Regulations (WHS Regulations) and GHS

Hazard pictograms (WHS) :



GHS07

GHS09

Signal word (WHS) :

Warning

Contains :

Copper

Hazard statements (WHS) :

H302 - Harmful if swallowed.
H317 - May cause an allergic skin reaction.
H411 - Toxic to aquatic life with long lasting effects.
P261 - Avoid breathing dust/fume/gas/mist/vapours/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 should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P330 - Rinse mouth.

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P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	%*
Copper	CAS-No.: 7440-50-8	15 – 40
2,5-bis(octyldithio)-1,3,4-thiadiazole	CAS-No.: 13539-13-4	0.1 – 1.5
Dioctyl disulphide	CAS-No.: 822-27-5	0.1 – 1.5

* The exact percentage has been withheld as commercially confidential in accordance with the Work Health and Safety (WHS) Regulations. The remaining percentage consists of ingredients that do not contribute to the hazard classification of this product.

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, both 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 eyes is likely to be irritating.

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

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Carbon dioxide. Dry powder.

Unsuitable extinguishing media : Water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable.

Explosion hazard : Product is not explosive.

Reactivity in case of fire : None known.

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Hazardous decomposition products in case of fire : No information available.

5.3. Advice for firefighters

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.

For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.
Emergency procedures : Evacuate unnecessary personnel.

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 vapour 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 any 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.

7.3. Specific end use(s)

No additional relevant information available.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

Copper (7440-50-8)	
Australia - IMAP Stage One Chemicals	
Tier I	Final (Human Health)
Remaining Priority	Environment (NICNAS holds data)
Australia - IMAP Stage Two Chemicals	
Tier I	Final [1] (chemical identified as low concern to human health by application of expert validated rules)
Tier I Human Health - Highest Use Category	Cosmetic [1]
Australia - Occupational Exposure Standards	
TWA	1 mg/m ³ TWA (dust and mist) 0.2 mg/m ³ TWA (fume)
USA - ACGIH - Occupational Exposure Limits	
Local name	Copper, as Cu
ACGIH® TLV® TWA	0.2 mg/m ³ (fume)
Remark (ACGIH®)	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2025
2,5-bis(octyldithio)-1,3,4-thiadiazole (13539-13-4)	
Australia - Occupational Exposure Standards	
Remark	OELs not established
USA - Occupational Exposure Limits	
Remark (ACGIH®)	OELs not established
Remark (OSHA)	OELs not established
Diocetyl disulphide (822-27-5)	
Australia - Occupational Exposure Standards	
Remark	OELs not established
USA - Occupational Exposure Limits	
Remark (ACGIH®)	OELs not established
Remark (OSHA)	OELs not established

8.2. Exposure controls

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.

Personal protection equipment

Personal protective equipment:

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

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Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Use eye protection suitable to the environment. Avoid direct contact with eyes. [AS/NZS 1337.1]

Skin protection

Skin and body protection:

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure. [AS/NZS 4501.2]

Hand protection:

Use gloves appropriate to the work environment. Gloves should be classified under AS/NZS 2161.10.1, Standard EN 374, or ASTM F1296.

Respiratory protection

Respiratory protection:

Where vapour, mist, or dust exceed PELs or other applicable OELs, use AS/NZS 1715 (or other equivalent national standard) approved dust/particulate respiratory protective equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Copper.
Appearance	: Paste. Thick grease.
Odour	: No data available.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not available
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: > 260 °C (500 °F)
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: 9.5 lb/gal
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not 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 sensitisation : 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

SECTION 12: Ecological information

12.1. Toxicity

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

Copper (7440-50-8)

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

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

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

EC50 72h - Algae [1] 0.0426 – 0.0535 mg/l (Species: Pseudokirchneriella subcapitata [static])

EC50 96h - Algae [1] 0.031 – 0.054 mg/l (Species: Pseudokirchneriella subcapitata [static])

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12.2. Persistence and degradability

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Persistence and degradability	No information available.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	No information available.
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12.4. Mobility in soil

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Mobility in soil	No information available.
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12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment 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 a 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

In accordance with ADR / IMDG / IATA

14.1. UN number or ID number

UN-No. (ADR)	: UN 3077
UN-No. (IMDG)	: UN 3077
UN-No. (IATA)	: UN 3077

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s.
Transport document description (ADR)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains : Copper), 9, III, (-)
Transport document description (IMDG)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains : Copper), 9, III, MARINE POLLUTANT
Transport document description (IATA)	: UN 3077 Environmentally hazardous substance, solid, n.o.s. (contains : Copper), 9, III

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 9
Danger labels (ADR)	: 9
	:



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IMDG

Transport hazard class(es) (IMDG) : 9
Danger labels (IMDG) : 9



IATA

Transport hazard class(es) (IATA) : 9
Danger labels (IATA) : 9



14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : M7
Special provisions (ADR) : 274, 335, 375, 601
Limited quantities (ADR) : 5kg
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P002, IBC08, LP02, R001
Special packing provisions (ADR) : PP12, B3
Mixed packing provisions (ADR) : MP10
Portable tank and bulk container instructions (ADR) : T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAV, LGBV
Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V13
Special provisions for carriage - Bulk (ADR) : VC1, VC2
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13
Hazard identification number (Kemler No.) : 90
Orange plates : 

Tunnel restriction code (ADR) : -
EAC code : 2Z

Transport by sea (IMDG)

Special provisions (IMDG) : 274, 335, 375, 966, 967, 969
Limited quantities (IMDG) : 5 kg
Excepted quantities (IMDG) : E1

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Packing instructions (IMDG)	: LP02, P002
Special packing provisions (IMDG)	: PP12
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: BK1, BK2, BK3, T1
Tank special provisions (IMDG)	: TP33
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW23

Air transport (IATA)

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y956
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 956
PCA max net quantity (IATA)	: 400kg
CAO packing instructions (IATA)	: 956
CAO max net quantity (IATA)	: 400kg
Special provisions (IATA)	: A97, A158, A179, A197, A215
ERG code (IATA)	: 9L

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

14.8. Hazchem or Emergency Action Code

EAC code : 2Z

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

15.1.1. Australia Regulations

All chemical substances in this product are listed in the Australian Inventory of Industrial Chemicals (AIIC) or are exempt, **except Dioctyl disulfide (CAS# 822-27-5) which is not in the AIIC list**

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Not applicable

Agricultural and Veterinary Chemicals Code Act 1994

Not applicable

15.1.2. International regulations

Montreal Protocol (Ozone Depleting Substances)

None of the components are listed

Stockholm Convention (Persistent Organic Pollutants)

Not subject to regulation

Rotterdam Convention (Prior Informed Consent)

Not subject to regulation

Basel Convention (Hazardous Waste)

Not subject to regulation

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SECTION 16: Other information

Abbreviations and acronyms	
ADG	Australian Dangerous Goods Code
CAS-No.	Chemical Abstract Service number
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
EN	European Standard
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
OEL	Occupational Exposure Limit
PPE	Personal protective equipment
SDS	Safety Data Sheet
STOT	Specific target organ toxicity

Indication of changes:

Revision 1.0: New SDS Created.

Date of issue : 16 October 2025

Other information : Author: Pace.

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Classification and procedure used to derive the classification for mixtures

Acute Tox. 4 (Oral)	H302	Calculation method
Skin Sens. 1	H317	Concentration limits
Aquatic Chronic 2	H411	Calculation method

Safety Data Sheet (SDS)

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.