

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
Revision Date: 28 October 2015 (rev 10)  
Page 1 of 10

## SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

Product Name: **PENETROX™ E OXIDE INHIBITING COMPOUND**

**Product Description:** Oxide inhibiting compound with evenly distributed copper particles.

**Intended Use:** Copper to copper connections, copper threads, grounding applications.

#### COMPANY IDENTIFICATION

**Supplier:** **BURNDY LLC**  
47 East Industrial Park  
Drive  
Manchester, NH 03109USA

**24 Hour Emergency** (800) 535-5053 (*US and Canada*)  
(352) 323-3500 (*International*)  
**Burndy Informational Number** (603) 647-5000

### SECTION 2 HAZARDS IDENTIFICATION

#### CLASSIFICATION

Health	Environmental	Physical
•Skin sensitization- Category 1	•No classifiable hazards	•No classifiable hazards

#### LABELLING

##### Symbols:



Irritant

**Signal Word:** Warning

##### **Hazard Statements**

•H317: May cause an allergic skin reaction

##### **Precautionary Statements**

•P261: Avoid breathing dust/fume/gas/mist/vapors/spray.  
•P272: Contaminated work clothing should not be allowed out of the workplace.  
•P280: Wear protective gloves/protective clothing/eye protection/face protection.  
•P302 + P352: IF ON SKIN: wash with plenty of soap and water.  
•P333 + P313: IF SKIN irritation or rash occurs: Get medical advice/attention.  
•P363: Wash contaminated clothing before reuse.  
•P501: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
Revision Date: 28 October 2015 (rev 10)  
Page 2 of 10

#### ADDITIONAL INFORMATION

**Hazards not otherwise classified:** Not applicable.

80 % of the mixture consists of ingredient(s) of unknown acute toxicity.

**WHMIS Classification(s):** Not controlled.

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### MIXTURES

Name	CAS#	Wt. Percentage*
Copper, elemental	7440-50-8	10-30
1,3,4-Thiadiazole, 2,5-bis(octyldithio)-	13539-13-4	0.1-1
Dioctyl disulfide	822-27-5	0.1-1

\* 68-89.8% material composition inclusive of inert and non-hazardous filler withheld as trade secret in accordance with paragraph 1910.1200(i)(1).

### SECTION 4 FIRST AID MEASURES

#### DESCRIPTION OF THE FIRST AID MEASURE

**Eye:** In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.

**Skin:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.

**Inhalation:** Not a normal route of exposure. If symptoms develop, remove to fresh air. Get medical attention if condition worsens.

**Ingestion:** If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention.

#### MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

**Eye:** May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

**Skin:** May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.

**Inhalation:** Not a normal route of exposure.

**Ingestion:** May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

#### INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

**Note to Physicians:** Symptoms may not appear immediately.

**Specific Treatments:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

## SECTION 5 FIRE FIGHTING MEASURES

### FLAMMABILITY

**Flammability:** Not flammable by WHMIS/OSHA criteria.

### EXTINGUISHING MEDIA

**Suitable Extinguishing Media:** Dry chemical, foam, carbon dioxide, water spray.

**Unsuitable Extinguishing Media:** Not available.

### SPECIAL HAZARDS ARISING FROM THE CHEMICAL

**Products of Combustion:** May include, and are not limited to: oxides of carbon.

### Explosion Data:

**Sensitivity to Mechanical Impact:** Not available.

**Sensitivity to Static Discharge:** Not available.

### SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

### METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

**Methods for Containment:** Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

**Methods for Cleaning-Up:** Scoop up material and place in a disposal container.

## SECTION 7 HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING

**Handling:** Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Handle and open container with care. When using do not eat or drink. (See section 8)

**General Hygiene Advice:** Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

## CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

**Storage:** Keep out of the reach of children. Keep container tightly closed. (See section 10).

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### CONTROL PARAMETERS:

#### Exposure Guidelines

Occupational Exposure Limits		
Ingredient	OSHA-PEL	ACGIH-TLV
Copper, elemental	0.1 mg/m <sup>3</sup> (fume); 1 mg/m <sup>3</sup> (dust and mist)	0.2 mg/m <sup>3</sup> (fume)
1,3,4-Thiadiazole, 2,5-bis(octyldithio)-	Not available.	Not available.
Diocetyl disulfide	Not available.	Not available.

### EXPOSURE CONTROLS

**Engineering Controls:** Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

### INDIVIDUAL PROTECTIVE MEASURES

#### Personal Protective Equipment:

**Eye/Face Protection:** Safety glasses or goggles are recommended when using product.

#### Skin Protection:

**Hand Protection:** Wear chemical resistant gloves.

**Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** None necessary under normal conditions of use. Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment.

**General Health and Safety Measures:** Handle according to established industrial hygiene and safety practices. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

## SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

### INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Paste / Thick grease.

**Color:** Copper.

**Odor:** Not available.

**Odor Threshold:** Not available.

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
Revision Date: 28 October 2015 (rev 10)  
Page 5 of 10

**Physical State:** Solid.

**pH:** Not available.

**Melting Point/Freezing Point:** Not available.

**Initial Boiling Point and Boiling Range:** Not available.

**Flash Point:** >250 °C (>500 °F)

**Evaporation Rate:** Not available.

**Flammability:** Not flammable.

**Lower Flammability/Explosive Limit:** Not available.

**Upper Flammability/Explosive Limit:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Relative Density/Specific Gravity:** Not available.

**Solubility:** Not available.

**Partition coefficient: n-octanol/water:** Not available.

**Auto-ignition Temperature:** Not available.

**Decomposition Temperature:** Not available.

**Viscosity:** Not available.

**Oxidizing Properties:** Not available.

**Explosive Properties:** Not available.

## SECTION 10

## STABILITY AND REACTIVITY

### REACTIVITY

No dangerous reaction known under conditions of normal use.

### CHEMICAL STABILITY

Stable under normal storage conditions.

### POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

### CONDITIONS TO AVOID

Heat.

### INCOMPATIBLE MATERIALS

None known.

### HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon.

## SECTION 11 TOXICOLOGICAL INFORMATION

### INFORMATION ON TOXICOLOGICAL EFFECTS

**Likely Routes of Exposure:** Skin contact, skin absorption, eye contact, and ingestion.

**Symptoms related to physical/chemical/toxicological characteristics:**

**Eye:** May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

**Skin:** May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.

**Ingestion:** May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

**Inhalation:** Not a normal route of exposure.

### ACUTE TOXICITY:

<b>Ingredient</b>	<b>LC50</b>	<b>LD50</b>
Copper, elemental	Inhalation > 5.11 mg/L 4h, rat	Dermal > 2000 mg/kg, rat
1,3,4-Thiadiazole, 2,5-bis(octyldithio)-	Not available.	Not available.
Dioctyl disulfide	Not available.	Not available.

#### Calculated overall Chemical Acute Toxicity Values

<b>LC50 (inhalation)</b>	<b>LD50 (oral)</b>	<b>LD50 (dermal)</b>
Not available.	Not available.	> 2000 mg/kg, rat

<b>Ingredient</b>	<b>Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*</b>
Copper, elemental	Not listed.
1,3,4-Thiadiazole, 2,5-bis(octyldithio)-	Not listed.
Dioctyl disulfide	Not listed.

\* See Section 15 for more information.

### DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

**Skin Corrosion/Irritation:** Based on available data, the classification criteria are not met.

**Serious Eye Damage/Irritation:** Based on available data, the classification criteria are not met.

**Respiratory Sensitization:** Based on available data, the classification criteria are not met.

**Skin Sensitization:** May cause an allergic skin reaction.

**STOT-Single Exposure:** Based on available data, the classification criteria are not met.

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
Revision Date: 28 October 2015 (rev 10)  
Page 7 of 10

**Chronic Health Effects:**

**Carcinogenicity:** Based on available data, the classification criteria are not met.

**Germ Cell Mutagenicity:** Based on available data, the classification criteria are not met.

**Reproductive Toxicity:**

**Developmental:** Based on available data, the classification criteria are not met.

**Teratogenicity:** Based on available data, the classification criteria are not met.

**Embryotoxicity:** Based on available data, the classification criteria are not met.

**Fertility:** Based on available data, the classification criteria are not met.

**STOT-Repeated Exposure:** Based on available data, the classification criteria are not met.

**Aspiration Hazard:** Based on available data, the classification criteria are not met.

**Toxicologically Synergistic Materials:** Not available.

**Other Information:** Not available.

<b>SECTION 12</b>	<b>ECOLOGICAL INFORMATION</b>
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**ECOTOXICITY**

**Acute/Chronic Toxicity:** May cause long-term adverse effects in the aquatic environment.

**PERSISTENCE AND DEGRADABILITY**

Not available.

**BIOACCUMULATIVE POTENTIAL**

**Bioaccumulation:** Not available.

**MOBILITY IN SOIL**

Not available.

**OTHER ADVERSE EFFECTS**

Not available.

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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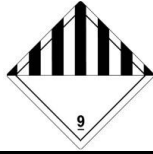

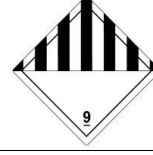
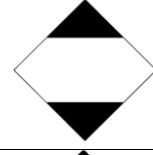
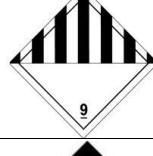
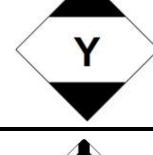
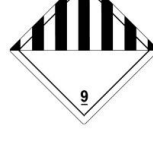
**WASTE TREATMENT METHODS**

**Disposal Method:** This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

**Other disposal recommendations:** Not available.

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
 Revision Date: 28 October 2015 (rev 10)  
 Page 8 of 10

**SECTION 14 TRANSPORTATION**

Regulatory Information	UN Number	Proper Shipping Name	Hazard Class	Packing Group	Label(s)	RQ	Additional Information
US DOT	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		5,000 Lbs (copper)	Only regulated for transportation as a hazardous substance
TDG	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		5,000 Lbs (copper)	Only regulated for transportation as a hazardous substance
							May be offered as a Limited Quantity (See TDG Schedule 1)
ADR	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		5,000 Lbs (copper)	Only regulated for transportation as a hazardous substance
							May be offered as a Limited Quantity (See ADR Table A)
IATA	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		5,000 Lbs (copper)	Only regulated for transportation as a hazardous substance
							May be offered as a Limited Quantity (See IATA PI Y956)
IMDG	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		5,000 Lbs (copper)	Only regulated for transportation as a hazardous substance

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
 Revision Date: 28 October 2015 (rev 10)  
 Page 9 of 10

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL**

**Canada:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

**US:** SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SARA Title III				
Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313
Copper, elemental	Not listed.	Not listed.	5000	313
1,3,4-Thiadiazole, 2,5-bis(octyldithio)-	Not listed.	Not listed.	Not listed.	Not listed.
Dioctyl disulfide	Not listed.	Not listed.	Not listed.	Not listed.

**State Regulations**

**California Proposition 65:**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**Global Inventories:**

Ingredient	Canada DSL/NDSL	USA TSCA
Copper, elemental	DSL	Yes.
1,3,4-Thiadiazole, 2,5-bis(octyldithio)-	DSL	Yes.
Dioctyl disulfide	No.	No.

**NFPA National Fire Protection Association:**

<b>Health:</b>	2
<b>Fire:</b>	1
<b>Reactivity:</b>	0

**HMIS-Hazardous Materials Identification System**

<b>Health:</b>	2*
<b>Fire:</b>	1
<b>Physical Hazard:</b>	0

**Hazard Rating:** 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

**SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:**

CP65      California Proposition 65

Product Name: PENETROX™ E OXIDE INHIBITING COMPOUND  
Revision Date: 28 October 2015 (rev 10)  
Page 10 of 10

**OSHA (O) Occupational Safety and Health Administration.**

**ACGIH (G) American Conference of Governmental Industrial Hygienists.**

- A1 - Confirmed human carcinogen.
- A2 - Suspected human carcinogen.
- A3 - Animal carcinogen.
- A4 - Not classifiable as a human carcinogen.
- A5 - Not suspected as a human carcinogen.

**IARC (I) International Agency for Research on Cancer.**

- 1 - The agent (mixture) is carcinogenic to humans.
- 2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
- 2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
- 3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
- 4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

**NTP (N) National Toxicology Program.**

- 1 - Known to be carcinogens.
- 2 - Reasonably anticipated to be carcinogens.

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Date	Description	Sections Affected
6/2/11	MSDS Version written	1-11
7/21/11	Updated to GHS criteria, additional sections added.	1-16
8/1/11	Updates	15
11/08/12	Updates	1, 3, 8, 9, 11, 12, 15
3/21/13	Updates	11
4/22/13	Version number update	-
5/22/14	Version number update	-
7/25/14	Updates	3,15
4/28/15	Version number update	-
10/28/15	Updates	1-16

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