

Product Name: PENETROX™ A-13 OXIDE INHIBITING COMPOUND  
 Revision Date: 2 April 2013 (rev 5)  
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# SAFETY DATA SHEET

|                  |   |
|------------------|---|
| <b>SECTION 1</b> | <b>PRODUCT AND COMPANY IDENTIFICATION</b> |
|------------------|---|

**PRODUCT**

**Product Name:** PENETROX™ A-13 OXIDE INHIBITING COMPOUND  
**Product Description:** Oxide inhibiting compound with evenly distributed zinc particles. **Intended Use:** Aluminum to aluminum connections, aluminum to copper connections, and aluminum conduit threads.

**COMPANY IDENTIFICATION**

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

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

|                  |                               |
|------------------|-------------------------------|
| <b>SECTION 2</b> | <b>HAZARDS IDENTIFICATION</b> |
|------------------|-------------------------------|

**CLASSIFICATION**

| Health   | Environmental  | Physical   |
|--|--|--|
| <ul style="list-style-type: none"> <li>•Acute Toxicity - Oral, Category 4</li> <li>•Skin Irritation - Category 3</li> <li>•Eye Irritation - Category 2B</li> </ul> | <ul style="list-style-type: none"> <li>•Acute toxicity - Category 2</li> <li>•Chronic Toxicity - Category 2</li> </ul> | <ul style="list-style-type: none"> <li>•Substances which, in contact with water emit flammable gas - Category 3</li> </ul> |

**LABELLING**

|   |   |   |
|---|---|---|
| <b>Symbols:</b>   |   |   |
|  |  |  |
| Substances which, in contact with water emit flammable gas                          | Acute Toxicity  | Environmental Hazard  |

|   |   |
|---|---|
| <b>Signal Word:</b> Warning   |   |
| <p><b>Hazard Statements</b></p> <ul style="list-style-type: none"> <li>•H 261: In contact with water releases flammable gas</li> <li>•H 302: Harmful if swallowed</li> <li>•H 316: Causes mild skin irritation</li> <li>•H 320: Causes eye irritation</li> <li>•H 411: Toxic to aquatic life and may cause long lasting harmful effects.</li> </ul> | <p><b>Precautionary Statements</b></p> <ul style="list-style-type: none"> <li>•P 232: Protect from moisture</li> <li>•P 264: Wash thoroughly after handling</li> <li>•P 270: Do not eat, drink or smoke when using this product.</li> <li>•P 273: Avoid release to the environment</li> </ul> |

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### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Reportable Hazardous Substance(s) or Complex Substance(s)

| Name                           | Common Name/Synonym                     | CAS#      | Percentage    | Impurities |
|--------------------------------|---|-----------|---------------|------------|
| Zinc (dust and fume)           | Zinc powder; Metallic zinc; Blue powder | 7440-66-6 | 15%           | None Known |
| Urethane Polymer of Castor Oil | Cosmetol; Ricinus Oil                   | 8001-79-4 | Not Specified | None Known |

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

\*\* The product may contain additional non-hazardous or trade secret components.

### SECTION 4 FIRST AID MEASURES

**ROUTES OF ENTRY:** Ingestion, Contact

#### EMERGENCY AND FIRST AID PROCEDURES:

**Inhalation:** Not likely to be hazardous by inhalation under normal conditions although chemical fumes can be generated during heating or combustion of product. Metal oxide fumes can cause metal fume fever. If exposed to excessive levels of fumes or dust may cause respiratory tract irritation, remove to fresh air. Get medical attention if cough or other symptoms develop.

**Eye Contact:** Product contains abrasive particulates. Direct contact can cause eye irritation. Irrigate eyes with low pressure water for at least 15 minutes, including under the eyelids. If irritation, swelling, or redness persists seek medical attention.

**Skin Contact:** Product may be irritating to the skin. For skin contact wipe product off of skin, wash area thoroughly with soap and water. Remove contaminated shoes or clothing if necessary. Get medical help if irritation continues.

**Ingestion:** May cause gastric distress, stomach pains, vomiting, and diarrhea. Do not induce vomiting. Contact poison control and seek medical help. Never give anything by mouth to an unconscious victim.

### SECTION 5 FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** CO<sub>2</sub>, foam, or dry chemical.

**Inappropriate Extinguishing Media:** Avoid water

#### FIRE FIGHTING

**Fire Fighting Instructions:** Firefighters should use standard protective equipment and including a self-contained breathing apparatus (SCBA).

**Unusual Fire Hazards/Combustible Products:** Closed containers may explode. Fire produces dense black smoke. Product is combustible when exposed to heat. Product may release carbon monoxide and other hazardous gases when burned. Fires involving zinc can produce toxic chemicals. Zinc can react with moisture or water to product flammable hydrogen gas.

### SECTION 6 ACCIDENTAL RELEASE MEASURES

#### PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for firefighting information. See the



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Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

### ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewer, basements or confined areas. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations may require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### CLEAN UP AND CONTAINMENT METHODS

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not touch or walk through spilled material. Avoid direct contact and wear specific protective equipment specified in section 8. Absorb or cover with dry earth, sand or other non-combustible material and vacuum or sweep to transfer material to containers. Prevent entry into waterways, sewer, basements or confined areas.

**Water Spill:** Use caution as zinc may release hydrogen gas on contact with water. Confine the spill immediately with booms. Stop leak if you can do it without risk. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## SECTION 7 HANDLING AND STORAGE

### Handling Procedures and Equipment

Avoid direct contact with heat and ignition sources. Avoid prolonged skin contact, contact with eyes, and ingestion. It is recommended that product is used in well ventilated areas. Wash hands before eating, drinking, and/or smoking. Empty containers may contain residue. Product residue may be combustible, but will not readily burn. Read product label for additional information.

### Storage Requirements

Store in a cool well-ventilated area with the lid tightly sealed when not in use. Keep away from children.

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

| Component Name                 | CAS #     | TWA/STEL | OSHA  | ACGIH                          | Not              |
|--------------------------------|-----------|----------|---|--------------------------------|------------------|
| Zinc (dust and fume)           | 7440-66-6 | TWA      | 15 mg/m <sup>3</sup> (Total)<br>5 mg/m <sup>3</sup> (Resp.) | 2 mg/m <sup>3</sup><br>(Resp.) | See Note Below*  |
| Zinc (dust and fume)           | 7440-66-6 | STEL     | N/A   | 10 mg/m <sup>3</sup>           | See Note Below*  |
| Urethane Polymer of Castor Oil | 8001-79-4 | TWA      | 5 mg/m <sup>3</sup> (mist)                                  | 5 mg/m <sup>3</sup> (mist)     | See Note Below** |

Note:

\*Exposure limits for zinc dust have not been set by OSHA or ACGIH. There are occupational standards for zinc oxide, which may be formed from zinc dust during welding, burning, and other fuming processes.

\*\*Exposure limits for urethane polymer of castor oil have not been established. The limits presented above are recommended limits.

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based on a similar material, mineral oil.

### ENGINEERING CONTROLS

General and/or local exhaust ventilation is recommended to maintain air quality and keep airborne exposures below recommended occupational exposure limits. Eyewash stations and washing facilities should be located in close proximity to work operations in which this product is used.

### PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** Respiratory protection is not expected to be required under normal usage of this material. A NIOSH approved respirator is recommended in situations where airborne contaminant concentration has not been confirmed to be below safe levels.

**Skin Protection:** No protection is ordinarily required under normal conditions of use. If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves. In instances where splashing or soaking is expected, wear oil or chemical resistant clothing.

**Eye Protection:** Under normal expected conditions, safety glasses with side shields are appropriate. In instances where contact is more likely to occur, chemical goggles or a full face shield is recommended.

**Skin and Body Protection:** No protection is ordinarily required under normal conditions of use. If prolonged or repeated contact is likely, chemical and oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

### ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

|                  |                                     |
|------------------|-------------------------------------|
| <b>SECTION 9</b> | <b>PHYSICAL/CHEMICAL PROPERTIES</b> |
|------------------|-------------------------------------|

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

#### GENERAL INFORMATION

**Physical State:** Semi-solid grease  
**Color:** Gray  
**Odor:** Mild Odor  
**Odor Threshold:** Not Applicable

#### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Flash Point [Method]:** 260°C (500°F) [ASTM D92]  
**Flammable Limits (Approximate volume % in air):** Not Volatile - Not Applicable  
**Autoignition Temperature:** Zinc: 460°C (860°F), Urethane Polymer of Castor Oil: 440°C (824°F)  
**Flammability:** Not Readily Flammable  
**Decomposition Temperature:** Not Available  
**Boiling Point/Range:** >315.5°C (> 600°F)  
**Melting/Freezing Point:** Not Applicable

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**Vapor Pressure:** Zinc Dust:  $1.10 \times 10^{-8}$  mmHg (at 127°C); Urethane Polymer of Castor Oil: 86 mmHg

**Vapor Density (Air = 1):** >1

**Solubility in Water:** Insoluble

**Specific Gravity (Water = 1):** 1.07

**% Volatile:** Not Applicable

**Evaporation Rate (n-butyl acetate = 1):** Negligible

**Viscosity:** Not Available

**Partition Coefficient (n-Octanol/Water):** Not Available

**pH:** Not Applicable

**Pour Point:** Similar material (Mineral Oil): -60°C (-76°F)

**Molecular Weight:** Not Available

**Molecular Formula:** Mixture

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Stable under normal storage conditions.

**CONDITIONS TO AVOID:** Excessive heat, direct contact with flames, contact with incompatible materials, moisture.

**MATERIALS TO AVOID:** Oxidizing materials

**HAZARDOUS DECOMPOSITION PRODUCTS:** Heating or combustion produces oxides of acrid smoke, toxic vapors and gases, carbon and zinc oxide.

**POSSIBILITY OF HAZARDOUS REACTIONS:** None are known.

## SECTION 11 TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY VALUES

| <u>Ingredient</u>              | <u>LD<sub>50</sub>/LC<sub>50</sub> Route and Species</u>                          | <u>Conclusion / Remarks</u>   |
|--------------------------------|---|---|
| Zinc (dust and fume)           | LD <sub>50</sub> : 630 mg/kg, Rat Oral<br>LDL <sub>0</sub> : 388 mg/kg, Duck Oral | LDL <sub>0</sub> = Lowest Lethal Dose. Exposure caused autonomic nervous system dysfunction and affected white blood cell counts. |
| Urethane Polymer of Castor Oil | LD <sub>50</sub> : >5,000 mg/kg, Rat Oral   | No further data reported.   |

### ACUTE EFFECTS

**Eye Contact:** Direct contact with product can cause eye irritation.

**Skin Contact:** Prolonged contact may lead mild skin irritation, folliculitis, oil acne, and dermatitis.

**Inhalation:** Breathing vapors, mists, or fumes may cause irritation to respiratory tract, especially if product has been heated. Inhalation of metal oxides may cause metal fume fever.

**Ingestion:** May cause gastric distress, stomach pains, vomiting, and diarrhea.

**Target Organ Effects:** Skin Dermatitis, Irritation

**Medical Conditions Aggravated by Exposure:** Pre-existing skin, eye or respiratory disorders may become aggravated through prolonged exposure.

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### CHRONIC/OTHER EFFECTS

Gastritis. Nephritis and oliguria have been reported from exposure to zinc. Inhalation fumes can cause metal fume fever, characterized by fever, chills, malaise, headache, cough, and abdominal discomfort. Effects typically last for 24-48 hours usually without long term reported effects. Chronic zinc exposure may cause sideroblastic anemia. Adverse reproductive effects have not been reported, but testicular tumors were found in laboratory rats injected with zinc. Zinc is not listed by IARC or ACGIH as a carcinogen. Urethane polymer of castor oil is not suspected to be a human carcinogen.

Additional information may be available by request.

**Carcinogenicity:** IARC: NO ACGIH: NO NTP: NO OSHA Regulated: NO

**The following ingredients are cited on the lists below:** None

--REGULATORY LISTS SEARCHED--

1 = NTP CARC  
2 = NTP SUS

3 = IARC 1  
4 = IARC 2A

5 = IARC 2B  
6 = OSHA CARC

## SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

### ECOTOXICITY

| <u>Ingredient</u>              | <u>LC<sub>50</sub> and Species</u>   | <u>Conclusion / Remarks</u>            |
|--------------------------------|--|--|
| Zinc (dust and fume)           | 6.8 mg/L / 48 hr., <i>Morone saxatilis</i> (Striped Bass)<br>1.6 mg/L / 96 hr., <i>Oncorhynchus mykiss</i> (Rainbow Trout) | Static Bioassay.<br>Moderate toxicity. |
| Urethane Polymer of Castor Oil | >10000 mg/L / 96 hr., <i>Danio rerio</i> (Zebra fish)  | Freshwater, semi-static                |

### Environmental Fate

There is limited data for the product ingredients. Mobility in soil is affected by the pH. There is no evidence that components will biotransform in aquatic environments. Zinc is a stable element and therefore does not degrade in the environment. Data suggests there is low potential for bioaccumulation in aquatic environments. Zinc will not accumulate in fish tissues at higher concentration exposures, but vegetation may accumulate higher levels of zinc if grown in contaminated soils. Although data does not show acute toxicity, oil releases may cause long term environmental effects. Urethane polymer of castor oil is not suspected of being toxic to the environment. Industrial products should not be discharged to sewers or other water sources to prevent the risks of long term adverse effects and environmental contamination.

## SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable Local, State and Federal laws and regulations, and material characteristics at time of disposal.

### DISPOSAL RECOMMENDATIONS

Zinc is regulated under the Clean Water Act. Do not discharge into sewers or waterways. May be landfilled at an approved facility. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

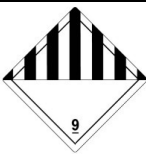



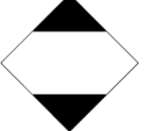

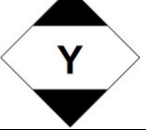
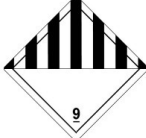
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**REGULATORY DISPOSAL INFORMATION**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-List:** None listed  
**RCRA U-List:** None listed

**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. (Zinc) | 9            | III           |    | 1,000 Lbs | Only regulated for transportation as a hazardous substance |
| TDG                    | UN3077    | Environmentally hazardous substance, solid, n.o.s. (Zinc) | 9            | III           |   |           |  |
|                        |           |   |              |               |  |           | May be offered as a Limited Quantity (See TDG Schedule 1)  |
| ADR                    | UN3077    | Environmentally hazardous substance, solid, n.o.s. (Zinc) | 9            | III           |  |           |  |
|                        |           |   |              |               |  |           | May be offered as a Limited Quantity (See ADR Table A)     |
| IATA                   | UN3077    | Environmentally hazardous substance, solid, n.o.s. (Zinc) | 9            | III           |  |           |  |
|                        |           |   |              |               |  |           | May be offered as a Limited Quantity (See IATA PI Y911)    |
| IMDG                   | UN3077    | Environmentally hazardous substance, solid, n.o.s. (Zinc) | 9            | III           |  |           | Zinc is a marine pollutant                                 |

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**SECTION 15 REGULATORY INFORMATION**

**OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

**EPCRA:** This material contains no extremely hazardous substances.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Delayed health

**SARA (313) TOXIC RELEASE INVENTORY:** No

**CALIFORNIA PROP 65:** This product contains no chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**CLEAN WATER ACT/OIL POLLUTION ACT:** This product contains zinc and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Releases of product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802.

**INTERNATIONAL REGULATIONS:****WHMIS CLASSIFICATION**

Class D2B: Skin/Eye Irritant

**WHMIS HAZARD SYMBOLS****EUROPEAN INVENTORY OF EXISTING CHEMICALS (EINECS):**

| Chemical Name                  | CAS Number | EINECS Number |
|--------------------------------|------------|---------------|
| Zinc (dust and fume)           | 7440-66-6  | 231-175-3     |
| Urethane Polymer of Castor Oil | 8001-79-4  | 232-293-8     |

**EU RISK (R) AND SAFETY (S) PHRASES:**

R 15: Contact with water liberates flammable gas.  
R 21/22: Harmful in contact with skin or if swallowed.  
R 36: Irritating to the eyes.  
R 51/53: Toxic to aquatic organisms, may cause long term adverse effects in aquatic environment  
S 8: Keep container dry  
S 24/25: Avoid contact with skin and eyes.  
S 36/37: Wear suitable gloves and eye/face protection  
S 29: Avoid release to the environment





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The following ingredients are cited on the lists below:

| Chemical Name                  | CAS Number | List Citations |
|--------------------------------|------------|----------------|
| Zinc (dust and fume)           | 7440-66-6  |                |
| Urethane Polymer of Castor Oil | 8001-79-4  |                |

--REGULATORY LISTS SEARCHED--

|               |                  |                   |             |
|---------------|------------------|-------------------|-------------|
| 1 = ACGIH ALL | 6 = TSCA 5a2     | 11 = CA P65 REPRO | 16 = MN RTK |
| 2 = ACGIH A1  | 7 = TSCA 5e      | 12 = CA RTK       | 17 = NJ RTK |
| 3 = ACGIH A2  | 8 = TSCA 6       | 13 = IL RTK       | 18 = PA RTK |
| 4 = OSHA      | 9 = TSCA 12b     | 14 = LA RTK       | 19 = RI RTK |
| 5 = TSCA 4    | 10 = CA P65 CARC | 15 = MI 293       |             |

Code key: CARC=Carcinogen; REPRO=Reproductive

**SECTION 16 OTHER INFORMATION**

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:**

Health - 1      Flammability - 1      Reactivity - 1

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATINGS:**

Health - 1\*      Flammability - 1      Physical Hazard - 1      PPE - B

**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        | Updated   | 15                     |
| 11/08/2012    | Updated   | 1, 3, 8, 9, 11, 12, 15 |
| 4/2/2013      | Updated   | 11                     |

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