

# SAFETY DATA SHEET

Diverting Plug



## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Diverting Plug  
**SYNONYMS:** Refractory Plug, Plug

**MANUFACTURER:** **ORGO-THERMIT, Inc.**  
**DIVISION:** **A Member of the Goldschmidt-Thermit-Group**  
**ADDRESS:** 3500 Colonial Drive North; Manchester, NJ 08759

**EMERGENCY PHONE:** (800) 424-9300 (CHEMTREC USA Assistance)  
(613) 424-6666 (CANUTEC Canada Assistance)

**OTHER CALLS:** (732) 657-5781  
**FAX:** (732) 657-5899

**CHEMICAL NAME:** Not applicable  
**CHEMICAL FAMILY:** Not applicable  
**CHEMICAL FORMULA:** Not applicable

**PRODUCT USE:** Non-hazardous solid consumable used in field rail track welding as a molten slag diverter.  
**PREPARED BY:** Orgo-Thermit, Inc.

### SECTION 1 NOTES:

Manufactured to a solid baked foundry product consisting of alumina, red iron oxide, and sodium silicate. A metal ring is embedded in the top for handling purposes.

## SECTION 2: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW:

Long term exposure to the product is not thought to produce chronic effects adverse to the health. Nevertheless, exposure by all routes should be minimized. Molten material may cause thermal burns. Molten steel is hazardous.

### MATERIAL DESCRIPTION:

The product shipped will consist entirely of solid pieces of metal and chemically bonded refractory materials with little or no respirable dust present.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	% WT
Aluminum Oxide	1344-28-1	proprietary
Red Iron Oxide	1309-37-1	proprietary
Sodium Silicate	1344-09-8	proprietary
Mild Steel	7439-89-6	proprietary

### SECTION 3 NOTES:

Weight percentages are considered trade secrets, and thus, are not disclosed.

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## SECTION 4: FIRST AID MEASURES

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### POTENTIAL HEALTH EFFECTS

#### **EYE CONTACT:**

Not normally a hazard due to physical form of product. Dust may produce eye discomfort and abrasive eye inflammation. Scratching of the cornea can occur if eye is rubbed. Contact with the heated material will cause thermal burns.

#### **SKIN CONTACT:**

Not normally a hazard due to physical form of product. This material is not thought to produce adverse health effects or skin irritation. Best practice is to keep exposure to a minimum and wear gloves. Contact with heated material will cause thermal burns.

#### **INGESTION:**

May cause severe and permanent damage to the digestive tract. Toxicological properties of this substance have not been fully investigated.

#### **INHALATION:**

Not normally a hazard due to physical form of product. Dust may be discomforting. Best practice is to limit exposure.

### FIRST AID TREATMENT

#### **EYE CONTACT:**

In case of overexposure to dust or fumes, immediately flush eye with plenty of water for at least 15 minutes; occasionally lifting the eyelids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

#### **SKIN CONTACT:**

In case of overexposure to dust or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, seek immediate medical attention.

#### **INGESTION:**

Not considered an ingestion hazard. However if excessive amounts of dust or particulates are swallowed, do NOT induce vomiting unless directed to do so by a medical professional. Get medical attention immediately.

#### **INHALATION:**

In case of overexposure to dust or fumes, move to fresh air. Loosen tight clothing such as collar, tie, belt, or waistband. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Any breathing difficulty should be evaluated by a medical professional.

### NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

Treat symptomatically and supportively.

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### SECTION 5: FIRE-FIGHTING MEASURES

**FLAMMABLE LIMITS:** Not available.

**FLASH POINT:** Not available.

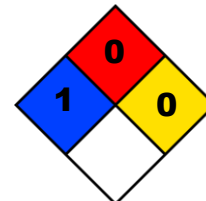
**AUTOIGNITION TEMPERATURE:** Not available.

**NFPA HAZARD CLASSIFICATION**

**HEALTH:** 1                      **FLAMMABILITY:** 0                      **REACTIVITY:** 0

**OTHER:** None

**Note:** NFPA classifications are 0 - 4, with 4 as the most severe.



**HMIS HAZARD CLASSIFICATION**

**HEALTH:** 1                      **FLAMMABILITY:** 0                      **REACTIVITY:** 0

**PROTECTION:** Safety glasses, gloves, dust respirator recommended.

**Note:** HMIS classifications are 0 - 4, with 4 as the most severe.

HMIS	
<b>HEALTH</b>	1
<b>FLAMMABILITY</b>	0
<b>REACTIVITY</b>	0
<b>PPE</b>	E

**EXTINGUISHING MEDIA:**

Noncombustible solid. Product is not flammable, combustible, nor explosive. Use extinguishing media appropriate for surrounding fire.

**SPECIAL FIRE FIGHTING PROCEDURES:**

Product itself does not burn. As with any fire, Fire fighters should wear full fire fighting turn-out gear and respiratory protection (self-contained breathing apparatus).

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Chlorine trifluoride reacts violently with aluminum oxide, producing a flame.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

None known.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**ACCIDENTAL RELEASE MEASURES:**

Sweep material into a disposal container. Avoid generation of dust cloud. Avoid inhalation. Use dustless and/or non-dust generating methods for clean up, such as vacuum or water.

**SECTION 6 NOTES:**

Use proper personal protective equipment as indicated in Section 8. While cleaning, use a NIOSH/MSHA approved respirator for dust.

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## SECTION 7: HANDLING AND STORAGE

### HANDLING:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Minimize dust generation and accumulation. Avoid inhalation and ingestion.

### STORAGE:

Store in a cool, dry area away from incompatible substances. Keep away from moisture.

### OTHER PRECAUTIONS:

Keep diverting plug dry at all times before and during use. DO NOT USE material that got wet for rail welding. While water does not affect the diverting plug itself, the addition of water to the Thermit<sup>®</sup> reaction can result in violent reactions. Since the intended use for the diverting plug is to divert the molten Thermit<sup>®</sup> steel, it is recommended to dispose of wet materials.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	ACGIH TLV	OSHA PEL	NIOSH
Aluminum oxide	1 mg / m <sup>3</sup>	15 mg / m <sup>3</sup> (total) 5 mg / m <sup>3</sup> (resp)	<10 mg / m <sup>3</sup>
Red Iron Oxide	5 mg / m <sup>3</sup>	15 mg / m <sup>3</sup> (total) 5 mg / m <sup>3</sup> (resp)	<10 mg / m <sup>3</sup>

### ENGINEERING CONTROLS:

When using Thermit<sup>®</sup> Welding Powder with a diverting plug, preventive fire protection measures should be employed to protect surrounding areas from catching fire. Depending on proximity and wind conditions, sparks could catch nearby items on fire. It is recommended to keep a chemical fire extinguisher and water supply nearby.

### VENTILATION :

Use local exhaust ventilation, or other engineering controls, to keep airborne levels below the recommended exposure limits. During manufacturing, bag houses (dust collectors) should be utilized to remove dust.

### RESPIRATORY PROTECTION:

Use a NIOSH/MSHA approved respirator if exposure limits are exceeded, or if irritation or other symptoms are experienced.

### EYE PROTECTION:

Safety glasses should be used when handling this product. When igniting Thermit<sup>®</sup> Welding Powder, shade 5 welding eye protection is recommended until the welding process is completed.

### SKIN PROTECTION:

Wear appropriate protective clothing, shoes, and gloves to prevent skin exposure; may cause skin irritation. When igniting Thermit<sup>®</sup> Welding Powder, protect skin from high temperatures. Welding gloves, jackets, pants, bibs, or aprons are recommended for use during the welding process.

### OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Face shields and hard hats are used to protect users from sparks during the welding and grinding processes.

### SECTION 8 NOTES:

Information concerning hazardous exposure limits has been compiled from sources considered to be reliable and is accurate and reputable to the best of our knowledge and belief but is not guaranteed to be so.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE:</b>	Reddish refractory brick
<b>ODOR:</b>	Odorless
<b>PHYSICAL STATE:</b>	Solid
<b>pH AS SUPPLIED:</b>	Not Available
<b>BOILING POINT:</b>	Not Available
<b>MELTING POINT:</b>	Not Available
<b>FREEZING POINT:</b>	Not Available
<b>VAPOR PRESSURE (mmHg):</b>	Not Available
<b>VAPOR DENSITY (AIR = 1):</b>	Not Available
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1):</b>	Not Available
<b>EVAPORATION RATE:</b>	Not Applicable
<b>SOLUBILITY IN WATER:</b>	Insoluble
<b>WEIGHT PERCENT SOLIDS:</b>	100% Solids
<b>PERCENT VOLATILE:</b>	Not Available
<b>MOLECULAR WEIGHT:</b>	Not Available
<b>VISCOSITY:</b>	Not Available

## SECTION 10: STABILITY AND REACTIVITY

**STABILITY:**  **STABLE**  **UNSTABLE**

**CONDITIONS TO AVOID (STABILITY):** Does not spontaneously ignite.

**INCOMPATIBILITY (MATERIAL TO AVOID):** Reactive with oxidizing agents and acids. Avoid contact with chlorine trifluoride, ethylene oxide, halogenated hydrocarbons, oxygen difluoride, sodium nitrate.

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Chlorine trifluoride reacts violently with aluminum oxide producing a flame. Ethylene oxide may react violently when in contact with highly catalytic surfaces such as pure aluminum oxide. Reacts with hot chlorinated rubber.

**HAZARDOUS POLYMERIZATION:** Not available.

**CONDITIONS TO AVOID (POLYMERIZATION):** Not applicable.

## SECTION 11: TOXICOLOGICAL INFORMATION

### ROUTES OF ENTRY:

Regarding Iron Oxide, inhalation is the only route of entry that has raised concern by the International Agency Research on Cancer (IARC). However, it is not known whether the risk is due to the inhalation of red iron oxide, silica, radioactivity of air in mines, or a combination of these factors.

### CHRONIC EFFECTS ON HUMANS:

On the basis of epidemiological evidence, exposure to iron oxide dust may be regarded as increasing the risk of lung cancer development in humans.

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## SECTION 11: TOXICOLOGICAL INFORMATION (cont.)

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### OTHER TOXIC EFFECTS ON HUMANS:

The substance can be slightly hazardous in case of skin contact (irritant). Material can be irritating to mucous membranes and upper respiratory tract. Contact with eyes can cause irritation.

### TOXICITY TO ANIMALS:

Aluminum oxide may cause cancer (tumorigenic) according to animal data.

### SECTION 11 NOTES:

Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

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## SECTION 12: ECOLOGICAL INFORMATION

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**ECOTOXICITY (AQUATIC AND TERRESTRIAL):** Ecological impact has not been determined.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### WASTE DISPOSAL METHOD:

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulation. It is the responsibility of the user to dispose of the material in the proper manner.

### RCRA HAZARD CLASS:

None listed.

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## SECTION 14: TRANSPORT INFORMATION

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### U.S. DEPARTMENT OF TRANSPORTATION

<b>PROPER SHIPPING NAME:</b>	DIVERTING PLUG
<b>HAZARD CLASS:</b>	NOT APPLICABLE
<b>ID NUMBER:</b>	50390
<b>PACKING GROUP:</b>	NOT APPLICABLE
<b>LABEL STATEMENT:</b>	ITEM#50390 CLASS 60

### WATER TRANSPORTATION

<b>PROPER SHIPPING NAME:</b>	DIVERTING PLUG
<b>HAZARD CLASS:</b>	NOT APPLICABLE
<b>ID NUMBER:</b>	50390
<b>PACKING GROUP:</b>	NOT APPLICABLE
<b>LABEL STATEMENTS:</b>	ITEM#50390 CLASS 60

### AIR TRANSPORTATION

<b>PROPER SHIPPING NAME:</b>	DIVERTING PLUG
<b>HAZARD CLASS:</b>	NOT APPLICABLE
<b>ID NUMBER:</b>	50390
<b>PACKING GROUP:</b>	NOT APPLICABLE
<b>LABEL STATEMENTS:</b>	ITEM#50390 CLASS 60

**CANADA TDG:** Not regulated.

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## SECTION 15: REGULATORY INFORMATION

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### U.S. FEDERAL REGULATIONS

**EPCRA Section 302 – Extremely Hazardous Substances:**

None listed.

**CERCLA - Hazardous Substances:**

None listed.

**EPCRA Section 313 – Toxic Chemicals:**

CAS # 1344-28-1, Aluminum Oxide, is on the list.

**CAA 112(r) - Regulated Chemicals for Accidental Release Prevention:**

None listed.

**EPA TSCA Section 8(b) – Chemical Inventory:**

CAS # 1309-37-1, Iron Oxide, is on the list.

CAS # 1344-28-1, Aluminum Oxide, is on the list.

CAS # 1344-09-8, Silicic acid / sodium salt, is on the list.

CAS # 7439-89-6, Iron, is on the list.

### STATE REGULATIONS:

**New Jersey Right to Know Hazardous Substance List:**

CAS # 1309-37-1, Iron Oxide, is on the list.

CAS # 1344-28-1, Aluminum Oxide, is on the list.

**California Proposition 65 List of Chemicals:**

None listed.

### INTERNATIONAL REGULATIONS:

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. The Safety Data Sheet contains all the information required by the Controlled Products Regulations.

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## SECTION 16: OTHER INFORMATION

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**PREPARATION INFORMATION:** Last revised October 4, 2013.

### DISCLAIMER:

*Orgo-Thermit Inc. believes that the information herein is factual but is not intended to be all inclusive. The information relates only to the specific material designated and does not relate to its use in combination with other materials or its use as to any particular process. Because safety standards and regulations are subject to change and because Orgo-Thermit has no continuing control over such changes; those handling, storing, or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored, used, or disposed of, and that the same is done in accordance with federal, state, and local law. Orgo-Thermit Inc. makes no warranty, expressed or implied, including (without limitation) warranties with respect to the completeness or continuing accuracy of the information contained herein, or with respect to fitness for any particular use.*