SAFETY DATA SHEET **DIVERTING PLUG**

1. Product and company identification

Product name:	Diverting Plug
Synonyms:	Refractory Plug, Plug
Manufacturer:	ORGO-THERMIT Inc.
Division of:	THE GOLDSCHMIDT GROUP
Address:	3500 Colonial Drive North; Manchester, NJ 08759
Emergency phone:	CHEMTREC (Assistance 24 hours / 7 days a week) Toll Free: 1-800-424-9300 Local: +1-703-527-3887
Other calls:	(732) 657-5781
Fax:	(732) 657-5899
Product use:	A manufactured solid bonded refractory product to divert molten slag during field welding operations.

2. Hazards identification

Hazard classification:
The product as shipped is considered an article as defined in 29 CFR 1910.1200 Hazard Communication.

Signal word:
No signal word is required because the product as shipped is not hazardous.

Hazard statement:
No hazard statement is required because the product as shipped is not hazardous.

Pictograms:
No pictograms are required on container labels because the product as shipped is not hazardous.

Precautionary statement:
No precautionary statement is required because the product as shipped is not hazardous.

Other hazard information:
The product as shipped is not in a form that would lead to exposure to any of the component chemicals. If the product is crushed exposure to its components by inhalation or contact is possible. Molten Thermit® steel and slag contained in the mold during welding operations will cause serious thermal burns.

3. Composition/information on ingredients

The ingredients listed below are combined to form a solid baked refractory product with a metal ring embedded in the top for ease handling. The product shipped produces little or no respirable dust if it is not broken or crushed. Weight percentages are not listed as they are considered a trade secret.

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

4. First aid measures

Eye contact:
Not normally a hazard due to physical form of the product. Dust from broken or crushed plugs may produce eye discomfort and abrasive eye inflammation. Scratching of the cornea can occur if eye is rubbed.

In case dust or fumes from the Thermit® reaction should meet the eye, immediately flush eye with plenty of water for at least 15 minutes occasionally lifting the eyelids. Get medical attention if irritation persists.

Thermal burns from contact with molten steel or slag should be treated as medical emergencies.

Skin contact:
There is no health hazard associated with skin contact with the product. Contact with molten steel or slag as well as heated forms and diverter pugs can cause thermal burns.

Wash hands thoroughly with soap and water after handling the product. Get medical attention if any irritation develops. If thermal burn occurs, seek immediate medical attention.

Ingestion:
Ingestion is not a hazard due to the physical form of the product. If the product is broken or crushed, dust may be produced while handling that may be ingested while breathing the dust.

If dust or particulates are swallowed, do not induce vomiting unless directed to do so by a medical professional. Get medical attention immediately.

Inhalation:
Inhalation is not a hazard due when handling intact product because of the physical form. If the product is broken or crushed, any dust produced may be discomforting if inhaled.

If dust from crushed or broken product or fumes from the Thermit® reaction are inhaled and discomfort is experienced, move the individual to fresh air to avoid further exposure, and loosen tight clothing such as collar, tie, belt, or waistband. If the individual is not breathing, provide rescue breathing. Any breathing difficulty should be evaluated by a medical professional.

5. Firefighting measures

Extinguishing media:
Non-combustible solid. Product is not flammable, combustible, or explosive. Use appropriate extinguishing media for any surrounding fire.

Special firefighting procedures:
Product will not burn. Wear personal protective equipment appropriate for fighting any surrounding fire.

Unusual fire and explosion hazards:
Chlorine trifluoride reacts violently with aluminum oxide, producing a flame.

Hazardous decomposition products:
None known

6. Accidental release measures

Spills are not likely with this product in the form as shipped. If the product dries out, avoid generation of dust when sweeping material into a disposal container by spraying with water or using a HEPA-filtered vacuum. If dust is generated, avoid inhalation of the dust by wearing appropriate NIOSH/MSHA approved dust respirator or filter.

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.

Other precautions:
Keep always diverting plug dry before and during use. Do not use plugs for rail welding that has gotten wet. While water will not affect the diverting plug itself, the addition of water to the Thermit® reaction can result in violent reaction and splattering of molten metal and formation of steam. Since the intended use for the diverting plug is to divert the molten Thermit® steel, it is recommended that wet products be discarded.

8. Exposure controls/personal protection

Ingredient	ACGIH TLV	OSHA PEL	NIOSH
Aluminum oxide	Not available	15 mg/m^3 (total) 5 mg/m^3 (resp)	<10 mg m^3
Red Iron Oxide	5 mg/m^3	15 mg/m^3 (total) 5 mg/m^3 (resp)	<10 mg/m^3

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.

Engineering controls:
Engineering controls to prevent exposure are not necessary under normal use conditions for the product. When cleaning up product that has been broken or crushed, it should be wetted with water before sweeping or a HEPA-filtered vacuum may be used to prevent dust generation.

Ventilation:
Local exhaust ventilation or other engineering controls are not necessary under normal use conditions for this product.

Respiratory protection:
Use a respirator/dust mask approved by NIOSH/MSHA for nuisance dusts if exposure limits are expected to be exceeded, or if irritation or other symptoms are experienced when cleaning up broken or crushed product.

Eye protection:
Safety glasses should be used when handling this product and during rail welding operations. When igniting Thermit® 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. When igniting Thermit® Welding Powder, protect skin from high temperatures. Welding gloves, jackets, pants, bibs, or aprons are recommended for use during the welding process.

9. Physical and chemical properties

Appearance:	Reddish refractory brick
Odour:	Odourless
Physical state:	Solid
pH as supplied:	Not applicable
Boiling point:	Not applicable
Melting point:	Not applicable
Freezing point:	Not applicable
Vapor pressure (mmHg):	Not applicable
Vapor density (air = 1):	Not applicable
Specific gravity (H2O = 1):	Not applicable
Evaporation rate:	Not applicable
Solubility in water:	Insoluble
Weight percent solids:	100 % Solids
Percent volatile:	Not applicable

Molecular weight:	Not applicable
Viscosity:	Not applicable
Flammable limits:	Not applicable
Flash point:	Not applicable
Autoignition temperature:	Not applicable

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

11. Toxicological information

Routes of entry:

Exposure to the ingredients of this product through eye contact, inhalation or ingestion are unlikely unless the product is broken or crushed, and dust is generated. Skin contact normally occurs through handling the product**.**

Chronic effects on humans:

NIOSH has reported that OSHA and ACGIH that chronic exposure to iron oxide dust or fume does not cause cancer in humans (OSHA PEL Project, 1988).

Other toxic effects on humans:

The product may cause slight irritation or abrasion in case of skin contact. Dust or fine particulates from broken or crushed product can be irritating to mucous membranes and upper respiratory tract if inhaled. Dust or particulates contacting the eyes can cause irritation. Data is available that would establish that the ingredients in this product do not cause mutations, reproductive effects, or developmental effects in humans at expected exposure levels from handling this product.

Toxicity to animals:

Published studies with experimental animal have provided no evidence that aluminum is carcinogenic.

12. Ecological information

Ecotoxicity (aquatic and terrestrial):
Ecological impact has not been determined.

13. Disposal considerations

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 of the ingredients are considered Listed or Characteristic wastes.

14. Transport information

U.S. Department of Transportation

Proper shipping name:	DIVERTING PLUG
Hazard class:	NOT APPLICABLE
ID number:	50390
Packing group:	NOT APPLICABLE
Label statements:	ITEM#50390 CLASS 60

Water transportation

Proper shipping name:	DIVERTING PLUG
Hazard class:	NOT APPLICABLE
ID number:	50390
Packing group:	NOT APPLICABLE
Label statements:	ITEM#50390 CLASS 60

Air transportation

Proper shipping name:	DIVERTING PLUG
Hazard class:	NOT APPLICABLE
ID number:	50390
Packing group:	NOT APPLICABLE
Label statements:	ITEM#50390 CLASS 60

Canada TDG:

Not regulated

15. Regulatory information

U.S. federal regulations

EPCRA Section 302 – Extremely Hazardous Substances:
None listed

EPCRA Section 304 – Extremely Hazardous Substances, Reportable Quantity:
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

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

16. Other information

NFPA hazard classification

Health:	1
Flammability:	0
Reactivity:	0
Other:	None
Note:	NFPA classifications are 0 – 4, with 4 as the most severe.

SAFETY DATA SHEET **DIVERTING PLUG**

HMIS hazard classification

Health:	1
Flammability:	0
Reactivity:	0
Other:	Safety glasses, gloves, dust respirator recommended.
Note:	HMIS classifications are 0 – 4, with 4 as the most severe.

HMIS	
HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PPE	E

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 process. Because safety standards and regulations are subject to change and because Orgo-Thermit Inc. has no continuing control over such changes; those handling, storing, or using the material should satisfy themselves that they have current information regarding the 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.