

**SAFETY DATA SHEET SAND MOLDS****1. Product and company identification**

Product name:	Sand Molds
Synonyms:	Welding Molds, Refractory Molds, Preformed Molds
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 foundry brick to provide a form to contain molten Thermit® steel during field welding operations.

2. Hazards identification**Hazard classification:**

The product as shipped is considered an article as defined in 29 CFR 1910.1200.

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.

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 Thermit® steel 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 metal wires embedded for sturdiness. 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.

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Ingredient	Cas. No.	% WT
Crystalline Silica	14808-60-7	proprietary
Iron Oxide	1309-37-1	proprietary
Sodium Silicate	1344-09-8	proprietary
Water	7732-18-5	proprietary
Mild Steel	7439-89-6	proprietary
Silicone Oil	63148-62-9	proprietary

4. First aid measures

Eye contact:

Dust is not normally a hazard due to physical form of product, but it may produce eye discomfort and abrasive eye inflammation. Scratching of the cornea can occur if eye is rubbed. If dust from crushed molds or fumes from the Thermit® reaction contact eyes, immediately flush with plenty of water for at least 15 minutes, occasionally lifting the eyelids. Get medical attention if irritation persists.

Contact with molten steel will cause thermal burns. Thermal burns should be treated as medical emergencies.

Skin contact:

Silica sand may cause skin irritation and abrasion. Wear leather or canvas work gloves when handling the molds. After handling the molds, wash with soap and plenty of water. Get medical attention if irritation develops or persists.

Contact with molten steel will cause thermal burns. If thermal burn occurs, seek immediate medical attention.

Ingestion:

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

Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

Inhalation:

Inhalation of dust is not normally a hazard due to the physical form of product. If crushed, dust formed may be discomforting and may be hazardous after long term exposure. Best practice is to avoid crushing the molds to limit exposure to dust.

In case of overexposure to dust or fumes from the Thermit® reaction, move to fresh air. Loosen tight clothing such as collar, tie, belt, or waistband. If not breathing, provide rescue breathing. If breathing is difficult, seek medical attention.



5. Firefighting measures

Extinguishing media:

Product is not flammable, combustible, or explosive. Use extinguishing media appropriate for surrounding fire.

Special firefighting procedures:

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

Unusual fire and explosion hazards:

Not applicable

Hazardous decomposition products:

None known

6. Accidental release measures

Sweep material into a disposal container or clean up with a vacuum cleaner or washing area with water. Avoid generation of dust. Avoid inhalation.

Use proper personal protective equipment as indicated in Section 8.

7. Handling and storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Storage:

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

Other precautions:

Keep sand molds dry at all times before and during use. Do not use material that got wet for rail welding. While water does not affect the sand mold itself, the addition of water to the Thermit® reaction can result in violent reactions. Since the intended use for the sand mold is to shape the Thermit® steel during cooling, it is recommended to dispose of wet materials.

8. Exposure controls/personal protection

Ingredient	ACGIH TLV	OSHA PEL	NIOSH
Crystalline Silica	0.025 mg/m ³	0.05 mg/m ³	0.05 mg/m ³
Iron Oxide	5 mg/m ³	15 mg/m ³ (total) 5 mg/m ³ (resp)	<10 mg/m ³
Zirconium compound	5 mg/m ³	5 mg/m ³	5 mg/m ³

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Engineering controls:

When using Thermit® Welding Powder with sand molds, surrounding combustible materials should be protected from sparks from the Thermit® reaction. A fire extinguisher or water supply should be available nearby.

Ventilation:

When using Thermit® Welding Powder with sand molds in an enclosed area, use local exhaust ventilation, or other appropriate engineering controls, to remove smoke produced by the Thermit® reaction. When cleaning up large amounts of silica dust from crushed molds, use appropriate engineering or work practice controls to keep airborne levels of silica dust below the exposure limits.

Respiratory protection:

If engineering or work practice controls are not feasible, use a NIOSH/MSHA approved respirator when exposure limits for silica dust are exceeded, or if irritation or other symptoms are experienced from silica sand dust from crushed molds or from smoke produced from the Thermit® reaction.

Eye protection:

Safety glasses should be used 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 protective clothing, shoes, and gloves appropriate for the hazards associated with rail welding operation. When igniting Thermit® Welding Powder, protect skin from high temperatures and sparks. 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 may be used to protect from sparks during the welding and grinding processes.

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:	3110 °F/1710 °C
Freezing point:	Not available
Vapor pressure (mmHg):	Not available
Vapor density (air = 1):	Not available
Specific gravity (H2O = 1):	2.65 g/mL @ 20 °C
Evaporation rate:	Not applicable



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Solubility in water:	Insoluble
Weight percent solids:	100 % Solids
Percent volatile:	Not available
Molecular weight:	Not available
Viscosity:	Not applicable
Flammable limits:	Not available
Flash point:	Not available
Autoignition temperature:	Not available

10. Stability and reactivity

Stability:	<input checked="" type="checkbox"/> STABLE <input type="checkbox"/> UNSTABLE
Conditions to avoid (stability):	Does not spontaneously ignite.
Incompatibility (material to avoid):	Powerful oxidizers (i.e.: fluorine, chlorine trifluoride, manganese trioxide, oxygen difluoride, hydrogen peroxide, acetylene, ammonia).
Hazardous decomposition or by-products:	Silica will dissolve in hydrofluoric acid and produce a corrosive gas, silicon tetrafluoride.
Hazardous polymerization:	Will not occur.
Conditions to avoid (polymerization):	Not applicable

11. Toxicological information

Routes of entry:

The typical route of exposure to silica dust is from breathing. Ingestion of dust is incidental to breathing. Crystalline silica has no known adverse health effects from ingestion, but it does pose a considerable health hazard due to long term inhalation.

Chronic effects on humans:

Inhalation of respirable crystalline silica has been demonstrated to cause silicosis. The respirable silica dust enters the lungs and causes the formation of scar tissue, thus reducing the lungs capability to take in oxygen. Respirable crystalline silica is listed in the National Toxicology Program Report on Carcinogens and in the International Agency Research on Cancer (IARC) Monographs as a human lung carcinogen based on a review of human and animal studies.

Other toxic effects on humans:

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

Toxicity to animals:

Silica sand has caused lung cancer in animals.



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:

The product as shipped is not a listed hazardous waste nor does it meet the criteria for a Characteristic Waste.

14. Transport information

U.S. Department of Transportation

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

Water transportation

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

Air transportation

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

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Canada TDG:

Not regulated.

15. Regulatory information

U.S. federal regulations

EPCRA Section 302 – Extremely Hazardous Substances:

None listed

CERCLA - Hazardous Substances:

None listed

EPCRA Section 313 – Toxic Chemicals:

None listed

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

None listed

State regulations:

New Jersey Right to Know Hazardous Substance List:

CAS # 7440-67-7, Zirconium, is on the list.

CAS # 14808-60-7, Silica - Quartz, is on the list.

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

California Proposition 65 List of Chemicals:

Crystalline silica is on the list.

16. Other information

NFPA hazard classification

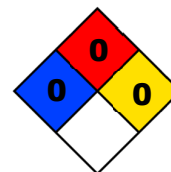
Health: 0

Flammability: 0

Reactivity: 0

Other: None

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



HMIS hazard classification

Health: 0

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	0
FLAMMABILITY	0
REACTIVITY	0
PPE	E

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Disclaimer:

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