

SAFETY DATA SHEET

Sand Molds



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sand Molds
SYNONYMS: Welding Molds, Refractory Molds or Preformed Molds

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, field welding consumable to mold, or shape, the Thermit® steel.
PREPARED BY: Orgo-Thermit, Inc.

SECTION 1 NOTES:

Manufactured as a foundry factory brick consisting mainly of silica oxide. Metal wires are embedded in the brick for structural reinforcement.

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 silica refractory with little or no respirable dust present.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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
Zircon Wash	None Assigned	proprietary

SECTION 3 NOTES:

Weight percentages are considered trade secrets, and thus, are not disclosed.
 Not all sand molds contain zircon wash. Sand molds with zircon wash will have a light blue thin coating along the weld collar area.

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SECTION 4: FIRST AID MEASURES

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, as crystalline silica does pose a considerable hazard with respect to long term inhalation.

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, treat symptomatically and supportively. Get medical attention.

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.

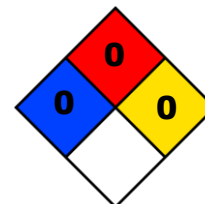
AUTOIGNITION TEMPERATURE: Not available.

NFPA HAZARD CLASSIFICATION

HEALTH: 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

PROTECTION: 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

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:

Not applicable.

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 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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	ACGIH TLV	OSHA PEL	NIOSH
Crystalline Silica	0.025 mg / m ³	0.11 mg / m ³ (total)	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

ENGINEERING CONTROLS:

When using Thermit[®] Welding Powder with sand molds, 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[®] 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.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Faceshields 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

APPEARANCE:	Reddish refractory brick
ODOR:	Odorless
PHYSICAL STATE:	Solid
pH AS SUPPLIED:	6-8
BOILING POINT:	4046°F / 2230°C
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
SOLUBILITY IN WATER:	Insoluble
WEIGHT PERCENT SOLIDS:	100% Solids
PERCENT VOLATILE:	Not Available
MOLECULAR WEIGHT:	Not Available
VISCOSITY:	Not Available

SECTION 10: STABILITY AND REACTIVITY

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

CONDITIONS TO AVOID (STABILITY): Does not spontaneously ignite.
INCOMPATIBILITY (MATERIAL TO AVOID): Powerful oxidizers (ie: 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.

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY:

Crystalline silica is a non-toxic material having no known adverse health effects from ingestion. It does pose considerable hazards with respect to long term inhalation.

CHRONIC EFFECTS ON HUMANS:

Inhalation of respirable crystalline silica may result in silicosis. The respirable silica dust enters the lungs and causes the formation of scar tissue, thus reducing the lungs capability to take in oxygen. There is no cure for silicosis. Silica, Crystalline (Respirable Size) is listed on the National Toxicology Program Report on Carcinogens and on the International Agency Research on Cancer Monographs as a Group 1 human lung carcinogen. The IARC has determined from a review of human and animal studies that there is sufficient evidence for the carcinogenicity of crystalline silica.

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SECTION 11: TOXICOLOGICAL INFORMATION (cont.)

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.

TOXICITY TO ANIMALS:

Silica sand has caused cancer in animals with the target organ being the lungs.

SECTION 12: ECOLOGICAL INFORMATION

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

SECTION 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 listed.

SECTION 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 STATEMENT: 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

CANADA TDG: Not regulated.

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SECTION 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.

EPA TSCA Section 8(b) – Chemical Inventory:

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

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

CAS # 14808-60-7, Quartz (SiO₂), is on the list.

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

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.

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.

SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION: Last revised February 4, 2014.

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.