

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : PermaCast FG-GM  
CAS-No. : Mixture  
Product code : 1017

#### 1.2. Other means of identification

Other means of identification : Basic Speciality

#### 1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Refractory  
Recommended use : Industrial use

#### 1.4. Supplier's details

RHI Magnesita  
425 South Salem Church Road  
York, PA, 17408  
United States  
T 717-792-3611  
[Resco SDS.TDS@rhimagnesita.com](mailto:Resco_SDS.TDS@rhimagnesita.com) - [WWW.RescoProducts.com](http://WWW.RescoProducts.com)

#### 1.5. Emergency phone number

Emergency number : EMERGENCY ONLY (CHEMTREC) USA & Canada 1-800-424-9300  
Outside USA & Canada +1 703-741-5970

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2B	H320	Causes eye irritation.
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation.

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning  
Hazard statements (GHS US) : H315 - Causes skin irritation  
H320 - Causes eye irritation  
H335 - May cause respiratory irritation  
Precautionary statements (GHS US) : P280 - Wear eye protection, protective gloves.

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Magnesium Oxide	CAS-No.: 1309-48-4	30 – 60	Not classified
chromium(III) oxide	CAS-No.: 1308-38-9	10 – 30	Not classified
iron(III) oxide	CAS-No.: 1309-37-1	10 – 30	Not classified
aluminium oxide, non-fibrous	CAS-No.: 1344-28-1	5 – 10	Not classified

Full text of hazard classes and H-statements : see section 16

# PermaCast FG-GM

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

### SECTION 4 First aid measures

#### 4.1. Description of necessary first-aid measures

First-aid measures after inhalation	: Allow affected person to breathe fresh air.
First-aid measures after skin contact	: Gently wash with plenty of soap and water.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

#### 4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after inhalation	: May cause respiratory irritation.
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#### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

No additional information available

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: In case of fire, all extinguishing media allowed.

#### 5.2. Specific hazards arising from the chemical

Fire hazard	: Not flammable.
Hazardous decomposition products in case of fire	: Fire conditions may produce small amounts of hexavalent chromium and other oxidation products.

#### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. ;Prevent entry to sewers and public waters
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### For non-emergency personnel

Protective equipment	: [In case of inadequate ventilation] wear respiratory protection. Protective gloves. Safety glasses.
Emergency procedures	: Avoid contact with skin. Avoid contact with eyes.

##### For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment.
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#### 6.2. Methods and materials for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: On land, sweep or shovel into suitable containers.
For further information refer to section 8: "Exposure controls/personal protection"	

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling	: Do not handle until all safety precautions have been read and understood.
Hygiene measures	: Do not eat, drink or smoke when using this product. Wash skin thoroughly with mild soap and water.

#### 7.2. Conditions for safe storage, including incompatibilities

Storage conditions	: Store this product in a dry location where it can be protected from the elements.
Incompatible products	: Strong acids.

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

##### Magnesium Oxide (1309-48-4)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	10 mg/m <sup>3</sup> inhalable dust
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##### USA - OSHA - Occupational Exposure Limits

OSHA PEL TWA	10 mg/m <sup>3</sup> respirable dust
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##### chromium(III) oxide (1308-38-9)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	0.003 mg/m <sup>3</sup> (Inhalable fraction)
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##### iron(III) oxide (1309-37-1)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	5 mg/m <sup>3</sup> (Respirable fraction)
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# PermaCast FG-GM

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

### aluminium oxide, non-fibrous (1344-28-1)

#### USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA 1 mg/m<sup>3</sup> respirable dust

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate ventilation to minimize dust concentrations.

### 8.3. Individual protection measures, such as personal protective equipment

#### Personal protective equipment:

Avoid all unnecessary exposure.

#### Hand protection:

Wear protective gloves.

#### Eye protection:

Chemical goggles or safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

## SECTION 9 Physical and chemical properties

### 9.1. Basic physical and chemical properties

Physical state	: Solid
Appearance	: Granular powder.
Color	: dark gray
Odor	: odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: > 2000 °F
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Flammability (solid, gas)	: Not flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: Slightly soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Explosion limits	: No data available
Particle characteristics	: No data available

### 9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

## SECTION 10 Stability and reactivity

### 10.1. Reactivity

Fire conditions may produce small amounts of hexavalent chromium and other oxidation products.

### 10.2. Chemical stability

No additional information available

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

No additional information available

# PermaCast FG-GM

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

### SECTION 11 Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

Magnesium Oxide (1309-48-4)	
LD50 oral rat	> 5000 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 2000 mg/kg body weight (Rabbit, Literature study, Dermal)

chromium(III) oxide (1308-38-9)	
LD50 oral rat	> 5000 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 5.41 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))

iron(III) oxide (1309-37-1)	
LD50 oral rat	> 10000 mg/kg body weight (Rat, Male, Experimental value, Oral)
LC50 Inhalation - Rat	5.05 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))

aluminium oxide, non-fibrous (1344-28-1)	
LD50 oral rat	> 15900 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 2.3 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))

Skin corrosion/irritation : Causes skin irritation.

Magnesium Oxide (1309-48-4)	
pH	11 (10 %)

chromium(III) oxide (1308-38-9)	
pH	No data available in the literature

iron(III) oxide (1309-37-1)	
pH	7 (5 %)

aluminium oxide, non-fibrous (1344-28-1)	
pH	9 – 10.5 (aqueous suspension, 33 %)

Serious eye damage/irritation : Causes eye irritation.

Magnesium Oxide (1309-48-4)	
pH	11 (10 %)

chromium(III) oxide (1308-38-9)	
pH	No data available in the literature

iron(III) oxide (1309-37-1)	
pH	7 (5 %)

aluminium oxide, non-fibrous (1344-28-1)	
pH	9 – 10.5 (aqueous suspension, 33 %)

Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
STOT-single exposure : May cause respiratory irritation.

# PermaCast FG-GM

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified

<b>Magnesium Oxide (1309-48-4)</b>	
Viscosity, kinematic	Not applicable (solid)
<b>chromium(III) oxide (1308-38-9)</b>	
Viscosity, kinematic	Not applicable (solid)
<b>iron(III) oxide (1309-37-1)</b>	
Viscosity, kinematic	Not applicable (solid)
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
Viscosity, kinematic	Not applicable (solid)
Symptoms/effects after inhalation	: May cause respiratory irritation.

## SECTION 12 Ecological information

### 12.1. Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified  
Hazardous to the aquatic environment, long-term (chronic) : Not classified

<b>chromium(III) oxide (1308-38-9)</b>	
LC50 - Fish [1]	> 10000 mg/l (ISO 7346-1, 96 h, Danio rerio, Static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	14 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
<b>iron(III) oxide (1309-37-1)</b>	
EC50 - Crustacea [1]	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
<b>aluminium oxide, non-fibrous (1344-28-1)</b>	
LC50 - Fish [1]	> 100 mg/l (96 h, Salmo trutta, Literature study)
EC50 - Crustacea [1]	> 100 mg/l (48 h, Daphnia magna, Literature study)

### 12.2. Persistence and degradability

#### PermaCast FG-GM (Mixture)

Persistence and degradability : Not established.

#### Magnesium Oxide (1309-48-4)

Persistence and degradability : Not applicable.  
Chemical oxygen demand (COD) : Not applicable  
ThOD : Not applicable

#### chromium(III) oxide (1308-38-9)

Persistence and degradability : Biodegradability: not applicable.  
Chemical oxygen demand (COD) : Not applicable (inorganic)  
ThOD : Not applicable (inorganic)

#### iron(III) oxide (1309-37-1)

Persistence and degradability : Biodegradability: not applicable.  
Chemical oxygen demand (COD) : Not applicable (inorganic)  
ThOD : Not applicable (inorganic)

# PermaCast FG-GM

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

aluminium oxide, non-fibrous (1344-28-1)	
Persistence and degradability	Not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
12.3. Bioaccumulative potential	
Magnesium Oxide (1309-48-4)	
Bioaccumulative potential	No bioaccumulation data available.
chromium(III) oxide (1308-38-9)	
Bioaccumulative potential	Not bioaccumulative.
iron(III) oxide (1309-37-1)	
Bioaccumulative potential	Not bioaccumulative.
aluminium oxide, non-fibrous (1344-28-1)	
Bioaccumulative potential	No data available.
12.4. Mobility in soil	
Magnesium Oxide (1309-48-4)	
Surface tension	No data available in the literature
Ecology - soil	No data available.
chromium(III) oxide (1308-38-9)	
Surface tension	No data available in the literature
Ecology - soil	Adsorbs into the soil.
iron(III) oxide (1309-37-1)	
Surface tension	Not applicable (solid)
Ecology - soil	Adsorbs into the soil.
aluminium oxide, non-fibrous (1344-28-1)	
Surface tension	Not applicable (water solubility < 1 mg/l)
Ecology - soil	No data available.
12.5. Other adverse effects	
Ozone	: Not classified
Fluorinated greenhouse gases	: No

## SECTION 13 Disposal considerations

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Chromite (Cr <sup>+3</sup> ) may in normal use be converted chemically to a chromate (Cr <sup>+6</sup> ). Hexavalent chromium (Cr <sup>+6</sup> ) is considered a hazardous material.

## SECTION 14 Transport information

In accordance with DOT / TDG / IMDG / IATA  
**Department of Transportation (DOT)**  
In accordance with DOT  
Not regulated  
**Transportation of Dangerous Goods**  
Not regulated  
**Transport by sea**  
Not regulated  
**Air transport**  
Not regulated

# PermaCast FG-GM

## Safety Data Sheet

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

### SECTION 15 Regulatory information

#### 15.1. Federal regulations

##### PermaCast FG-GM (Mixture)

Note This information must be included in all SDS's that are copied and distributed for this material.

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

##### chromium(III) oxide (1308-38-9)

Subject to reporting requirements of United States SARA Section 313

##### aluminium oxide, non-fibrous (1344-28-1)

Not subject to reporting requirements of the United States SARA Section 313

Note Note: The section 313 chemical list contains "CAS # 1344-28-1 Aluminum Oxide (Fibrous forms)"; the Aluminum oxide contained in this product is non-fibrous, and thus is not a section 313 material. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting.

#### 15.2. International regulations

##### CANADA

##### Magnesium Oxide (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

##### chromium(III) oxide (1308-38-9)

Listed on the Canadian DSL (Domestic Substances List)

##### iron(III) oxide (1309-37-1)

Listed on the Canadian DSL (Domestic Substances List)

##### aluminium oxide, non-fibrous (1344-28-1)

Listed on the Canadian DSL (Domestic Substances List)

##### EU-Regulations

No additional information available

##### National regulations

No additional information available

#### 15.3. State regulations

##### PermaCast FG-GM (Mixture)

U.S. - California - Proposition 65 - Other information This product contains chromite (Cr<sup>+3</sup>) which may in normal use, be converted chemically to a chromate (Cr<sup>+6</sup>) hexavalent chrome, a chemical known to the State of California to cause cancer.

Component	State or local regulations
Magnesium Oxide(1309-48-4)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
chromium(III) oxide(1308-38-9)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List
iron(III) oxide(1309-37-1)	U.S. - New Jersey - Right to Know Hazardous Substance List
aluminium oxide, non-fibrous(1344-28-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16 Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS 2024)

Revision date : 5/27/2026  
Issue date : 5/1/2015  
Other information : Report language name. English. In the event of any conflict between English and other language versions, the English version shall prevail.

#### Full text of hazard classes and H-statements

H315	Causes skin irritation
H320	Causes eye irritation
H335	May cause respiratory irritation

Safety Data Sheet (SDS), USA

This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein, however, RHI Magnesita makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.