

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Trade name : MO Super 3  
Product code : 416600

#### 1.2. Recommended use and restrictions on use

Recommended use : Refractory Applications

#### 1.3. Supplier

Reno Refractories, Inc.  
601 Reno Drive  
P.O. Box 201  
Morris, AL, 35116  
United States  
T 205-647-0240 - F 205-647-6854  
[sales@r-ref.com](mailto:sales@r-ref.com) - [www.renorefractories.com](http://www.renorefractories.com)

#### 1.4. Emergency telephone number

Emergency number : 1-800-262-8200 CHEMTREC

### SECTION 2: Hazard(s) identification

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

##### GHS US classification

Skin corrosion/irritation Category 1	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	Causes serious eye damage
Carcinogenicity Category 1A	May cause cancer
Specific target organ toxicity (repeated exposure) Category 1	Causes damage to organs through prolonged or repeated exposure

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : Causes severe skin burns and eye damage  
Causes serious eye damage  
May cause cancer  
Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US) : Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Wash hands, forearms and face thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If swallowed: rinse mouth. Do NOT induce vomiting.

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If exposed or concerned: Get medical advice/attention.  
Immediately call a poison center or doctor.  
Get medical advice/attention if you feel unwell.  
Specific treatment (see supplemental first aid instruction on this label).  
Wash contaminated clothing before reuse.  
Store locked up.  
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Sodium silicate	CAS-No.: 1344-09-8	8.478 – 11.775	Skin Corr. 1, H314 Eye Dam. 1, H318
Crystalline silica	CAS-No.: 14808-60-7	3.15 – 9.3	Carc. 1A, H350 STOT RE 1, H372
Titanium dioxide	CAS-No.: 13463-67-7	0.57 – 2.745	Carc. 2, H351

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

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.  
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Burns.  
Symptoms/effects after eye contact : Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

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

Suitable extinguishing media : Water spray. Dry powder. Foam.

### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

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

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapors/spray.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.  
Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Hygiene measures : Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

Storage conditions : Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### MO Super 3

No additional information available

#### Crystalline silica (14808-60-7)

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

Local name	Silica crystalline - quartz
ACGIH OEL TWA	0.025 mg/m <sup>3</sup> (Respirable fraction)
Remark (ACGIH)	TLV® Basis: Pulm fibrosis; lung cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2023

##### USA - OSHA - Occupational Exposure Limits

Local name	Quartz (Respirable) (Silica: Crystalline)
Remark (OSHA)	Table Z-3. For OSHA PEL (TWA): Use formulas: (250 / (%SiO <sub>2</sub> +5)) for mppcf and (10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2)) for mg/m <sup>3</sup> . CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts

#### Titanium dioxide (13463-67-7)

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

Local name	Titanium dioxide
ACGIH OEL TWA	0.2 mg/m <sup>3</sup> (Respirable fraction) 2.5 mg/m <sup>3</sup> (Respirable fraction)
Remark (ACGIH)	TLV® Basis: LRT irr; pneumoconiosis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2023

##### USA - OSHA - Occupational Exposure Limits

Local name	Titanium dioxide (Total dust)
OSHA PEL (TWA) [1]	15 mg/m <sup>3</sup>
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

#### Sodium silicate (1344-09-8)

No additional information available

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Color	: Grey to black
Odor	: Almost odourless
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: 2.2 – 2.9
Solubility	: Water: < 0.1 %
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

VOC content : 0 %

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### 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

#### Titanium dioxide (13463-67-7)

LD50 oral rat	> 2000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 5.09 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Experimental value, Inhalation (dust), 14 day(s))

#### Sodium silicate (1344-09-8)

LD50 oral rat	> 2000 mg/kg (Rat, Oral)
---------------	--------------------------

Skin corrosion/irritation : Causes severe skin burns.

#### Crystalline silica (14808-60-7)

pH	6 – 7
----	-------

#### Titanium dioxide (13463-67-7)

pH	7 (aqueous suspension, 10 %)
----	------------------------------

#### Sodium silicate (1344-09-8)

pH	12.8
----	------

Serious eye damage/irritation : Causes serious eye damage.

#### Crystalline silica (14808-60-7)

pH	6 – 7
----	-------

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Titanium dioxide (13463-67-7)

pH	7 (aqueous suspension, 10 %)
----	------------------------------

### Sodium silicate (1344-09-8)

pH	12.8
----	------

Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : May cause cancer.

### Crystalline silica (14808-60-7)

IARC group	1 - Carcinogenic to humans
------------	----------------------------

### Titanium dioxide (13463-67-7)

IARC group	2B - Possibly carcinogenic to humans
------------	--------------------------------------

Reproductive toxicity : Not classified  
STOT-single exposure : Not classified  
STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

### Crystalline silica (14808-60-7)

STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
------------------------	---

Aspiration hazard : Not classified  
Viscosity, kinematic : Not applicable

### Crystalline silica (14808-60-7)

Viscosity, kinematic	Not applicable (solid)
----------------------	------------------------

### Titanium dioxide (13463-67-7)

Viscosity, kinematic	Not applicable
----------------------	----------------

Symptoms/effects after skin contact : Burns.  
Symptoms/effects after eye contact : Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

### Titanium dioxide (13463-67-7)

LC50 - Fish [1]	> 300 mg/l (Danio rerio, Fresh water, Literature study, Nominal concentration)
EC50 - Crustacea [1]	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)

### Sodium silicate (1344-09-8)

LC50 - Fish [1]	3185 mg/l (96 h, Brachydanio rerio, Not neutralized)
EC50 - Crustacea [1]	216 mg/l (96 h, Daphnia magna)
EC50 - Crustacea [2]	160 mg/l (96 h, Amphipoda)

### 12.2. Persistence and degradability

### Crystalline silica (14808-60-7)

Persistence and degradability	Biodegradability: not applicable.
-------------------------------	-----------------------------------

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>Crystalline silica (14808-60-7)</b>	
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
<b>Titanium dioxide (13463-67-7)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
<b>Sodium silicate (1344-09-8)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

### 12.3. Bioaccumulative potential

<b>Crystalline silica (14808-60-7)</b>	
Bioaccumulative potential	Bioaccumulation: not applicable.
<b>Titanium dioxide (13463-67-7)</b>	
Bioaccumulative potential	Not bioaccumulative.
<b>Sodium silicate (1344-09-8)</b>	
Bioaccumulative potential	No test data of component(s) available.

### 12.4. Mobility in soil

<b>Crystalline silica (14808-60-7)</b>	
Ecology - soil	No (test)data on mobility of the substance available.
<b>Titanium dioxide (13463-67-7)</b>	
Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.
<b>Sodium silicate (1344-09-8)</b>	
Ecology - soil	No (test)data on mobility of the component(s) available.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.



# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

#### 14.1. UN number

Not regulated for transport

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not applicable
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : Not applicable

##### TDG

Transport hazard class(es) (TDG) : Not applicable

##### IMDG

Transport hazard class(es) (IMDG) : Not applicable

##### IATA

Transport hazard class(es) (IATA) : Not applicable

#### 14.4. Packing group

Packing group (DOT)	: Not applicable
Packing group (TDG)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Special precautions for user

##### DOT

No data available

##### TDG

No data available

##### IMDG

No data available

##### IATA

No data available

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

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

#### 15.2. International regulations

##### CANADA

##### Crystalline silica (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List)

##### Titanium dioxide (13463-67-7)

Listed on the Canadian DSL (Domestic Substances List)

##### Sodium silicate (1344-09-8)

Listed on the Canadian DSL (Domestic Substances List)

##### EU-Regulations

No additional information available

##### National regulations

##### Crystalline silica (14808-60-7)

Listed on IARC (International Agency for Research on Cancer)

##### Titanium dioxide (13463-67-7)

Listed on IARC (International Agency for Research on Cancer)

#### 15.3. US State regulations

Component	State or local regulations
Crystalline silica(14808-60-7)	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
Titanium dioxide(13463-67-7)	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 Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 7/11/2023

Full text of H-phrases	
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H350	May cause cancer
H351	Suspected of causing cancer

# MO Super 3

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

---

Full text of H-phrases	
H372	Causes damage to organs through prolonged or repeated exposure

Reno Safety Data Sheet (SDS),USA

The information provided in the Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release. Reno Refractories, Inc. makes no warranties, expressed or implied, with respect to such information, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. User is responsible for determining whether the product is fit for a particular purpose and suitable for user's method of use or application. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.