

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 12/5/2023

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Trade name Reno Lite Cast 24-60

Product code 135500

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 - www.renorefractories.com

1.4. Emergency telephone number

: 1-800-262-8200 CHEMTREC Emergency number

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2 Carcinogenicity Category 1A

Specific target organ toxicity (repeated exposure) Category 1

Causes skin irritation Causes serious eye irritation

May cause cancer

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 skin irritation

Causes serious eye irritation

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 on skin: Wash with plenty of water.

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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.

Get medical advice/attention if you feel unwell.

Specific treatment (see supplemental first aid instruction on this label).

If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

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
Silica, crystalline – cristobalite	CAS-No.: 14464-46-1	2.7 – 4.4	STOT RE 1, H372
Crystalline silica	CAS-No.: 14808-60-7	≤ 4.212	Carc. 1A, H350 STOT RE 1, H372
Calcium oxide	CAS-No.: 1305-78-8	0 – 2.727	Skin Corr. 1, H314 Eye Dam. 1, H318 STOT SE 3, H335
Amorphous/fused silica	CAS-No.: 60676-86-0	0 – 2.7	STOT RE 2, H373
Titanium dioxide	CAS-No.: 13463-67-7	0 – 1.38	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 : IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get

medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Eye irritation.

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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.

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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

Reno Lite Cast 24-60

No additional information available

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CILIM	oxide	16 79	• 41

USA - ACGIH - Occupational Exposure Limits

Local name	Calcium oxide
ACGIH OEL TWA	2 mg/m³
Remark (ACGIH)	TLV® Basis: URT irr
Regulatory reference	ACGIH 2023

USA - OSHA - Occupational Exposure Limits

Local name	Calcium oxide
OSHA PEL (TWA) [1]	5 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

Titanium dioxide (13463-67-7)

USA - ACGIH - Occupational Exposure Limits

Local name	Titanium dioxide
ACGIH OEL TWA	0.2 mg/m³ (Respirable fraction) 2.5 mg/m³ (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/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

Silica, crystalline – cristobalite (14464-46-1)

USA - ACGIH - Occupational Exposure Limits

Local name	Silica crystaline - cristobalite
ACGIH OEL TWA	0.025 mg/m³ (Respirable fraction)
Remark (ACGIH)	TLV® Basis: Pulm fibrosis; lung cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2023

USA - OSHA - Occupational Exposure Limits

cal name	Cristobalite (Silica: Crystalline)
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Silica, crystalline – cristobalite (14464-46-1)	
Remark (OSHA)	Table Z-3. For OSHA PEL (TWA): Use ½ the value calculated from the count or mass formulae for quartz. CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
Crystalline silica (14808-60-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Silica crystaline - quartz
ACGIH OEL TWA	0.025 mg/m³ (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 / (%SiO2+5)) for mppcf and (10 mg/m3 / (%SiO2+2)) for mg/m3. CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
Amorphous/fused silica (60676-86-0)	
USA - OSHA - Occupational Exposure Limits	
Local name	Silica, fused, respirable dust
OSHA PEL (TWA) [2]	20 mppcf
Remark (OSHA)	Table Z-3. For OSHA PEL (TWA): Use formula: (80 mg/m3 / (%SiO2)) for mg/m3. CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
0.0 • • • • • • • • • • • • • • • • • •	·

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

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.

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Personal protective equipment symbol(s):







SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Appearance Granular powder. Lumps.

Color Grav

Odor Almost odorless Odor threshold No data available рΗ 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 %

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).

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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

ľ	1	.1.	Info	ormat	ion	on f	toxico	loa	ical	effects

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

Calcium oxide (1305-78-8)				
LD50 oral rat	> 2000 mg/kg body weight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value, Oral, 14 day(s))			
LD50 dermal rabbit	> 2500 mg/kg body weight (EU Method B.3: Acute toxicity (dermal), 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))			
LC50 Inhalation - Rat	> 6.04 mg/l (OECD 436: Acute inhalation toxicity-acute toxic class method, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 15 day(s))			

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))

Skin corrosion/irritation : Causes skin irritation.

Calcium oxide (1305-78-8)	
рН	12.8

Hamum dioxide (13463-67-7)			
	Ha	7 (aqueous suspension	10 %)

Silica, crystalline – cristobalite (14464-46-1)

pH 6-7

Crystalline silica (14808-60-7)

pH 6-7

Serious eye damage/irritation : Causes serious eye irritation.

Calcium	oxide	(1305-78-8)
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pH 12.8

Titanium dioxide (13463-67-7)

pH 7 (aqueous suspension, 10 %)

Silica, crystalline - cristobalite (14464-46-1)

pH 6-7

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Crystalline silica (14808-60-7)	
рН	6 – 7
Respiratory or skin sensitization :	Not classified
3	Not classified
Carcinogenicity :	May cause cancer.
Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans
Crystalline silica (14808-60-7)	
IARC group	1 - Carcinogenic to humans
Reproductive toxicity :	Not classified
STOT-single exposure :	Not classified
Calcium oxide (1305-78-8)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure :	Causes damage to organs through prolonged or repeated exposure.
Silica, crystalline – cristobalite (14464-46-1)	
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.
Amorphous/fused silica (60676-86-0)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
	Not classified Not applicable
Calcium oxide (1305-78-8)	Not applicable
Viscosity, kinematic	Not applicable (solid)
Titanium dioxide (13463-67-7)	
Viscosity, kinematic	Not applicable
Silica, crystalline – cristobalite (14464-46-1)	
Viscosity, kinematic	Not applicable
Crystalline silica (14808-60-7)	
Viscosity, kinematic	Not applicable (solid)
Amorphous/fused silica (60676-86-0)	
Viscosity, kinematic	Not applicable
• •	Irritation.
Symptoms/effects after eye contact :	Eye irritation.
SECTION 12: Ecological information	

SECTION 12: Ecological information

: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment

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Calcium oxide (1305-78-8) Bioaccumulative potential

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Calcium oxide (1305-78-8)	
LC50 - Fish [1]	50.6 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across, GLP)
EC50 - Crustacea [1]	49.1 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 algae	184.57 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across, GLP)
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)
12.2. Persistence and degradability	
Calcium oxide (1305-78-8)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Titanium dioxide (13463-67-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Silica, crystalline – cristobalite (14464-46	G-1)
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Crystalline silica (14808-60-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Amorphous/fused silica (60676-86-0)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
12.3. Bioaccumulative potential	

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Not bioaccumulative.

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Titanium dioxide (13463-67-7)		
Bioaccumulative potential	Not bioaccumulative.	
Silica, crystalline – cristobalite (14464-46-1)		
Bioaccumulative potential	No test data available.	
Crystalline silica (14808-60-7)		
Bioaccumulative potential	Bioaccumulation: not applicable.	
Amorphous/fused silica (60676-86-0)		
Bioaccumulative potential	No bioaccumulation data available.	

12.4. Mobility in soil

Calcium oxide (1305-78-8)		
Surface tension	No data available in the literature	
Ecology - soil	No (test)data on mobility of the substance available.	
Titanium dioxide (13463-67-7)		
Surface tension	No data available in the literature	
Ecology - soil	Low potential for mobility in soil.	
Silica, crystalline – cristobalite (14464-46-1)		
Ecology - soil	No (test)data on mobility of the substance available.	
Crystalline silica (14808-60-7)		
Ecology - soil	No (test)data on mobility of the substance available.	
Amorphous/fused silica (60676-86-0)		
Ecology - soil	No (test)data on mobility of the substance 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.

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

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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 applicablePacking group (TDG): Not applicablePacking group (IMDG): Not applicablePacking 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

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

Calcium oxide (1305-78-8)

Listed on the Canadian DSL (Domestic Substances List)

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Titanium dioxide (13463-67-7)

Listed on the Canadian DSL (Domestic Substances List)

Silica, crystalline – cristobalite (14464-46-1)

Listed on the Canadian DSL (Domestic Substances List)

Crystalline silica (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List)

Amorphous/fused silica (60676-86-0)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Titanium dioxide (13463-67-7)

Listed on IARC (International Agency for Research on Cancer)

Crystalline silica (14808-60-7)

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

Component	State or local regulations
Calcium oxide(1305-78-8)	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
Silica, crystalline – cristobalite(14464-46-1)	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
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
Amorphous/fused silica(60676-86-0)	U.S Massachusetts - Right To Know List; U.S New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

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Full text of H-phra	Full text of H-phrases	
H314	Causes severe skin burns and eye damage	
H318	Causes serious eye damage	
H335	May cause respiratory irritation	

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Full text of H-phrases	
H350	May cause cancer
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause 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 it's 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.