

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 Black Bull 410900 Product code

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 1

Serious eye damage/eye irritation Category 1

Carcinogenicity Category 1A

Specific target organ toxicity (repeated exposure) Category 1

Causes severe skin burns and eye damage

Causes serious eye damage

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 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.

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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.

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
Crystalline silica	CAS-No.: 14808-60-7	16.3 – 21.88	Carc. 1A, H350 STOT RE 1, H372
Silica, crystalline – cristobalite	CAS-No.: 14464-46-1	3 – 6.763	STOT RE 1, H372
Sodium silicate	CAS-No.: 1344-09-8	6.123 – 6.594	Skin Corr. 1, H314 Eye Dam. 1, H318
Carbon Black	CAS-No.: 1333-86-4	0.9 – 1	Carc. 2, H351
Titanium dioxide	CAS-No.: 13463-67-7	0.132 – 0.696	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

First-aid measures after inhalation
First-aid measures after skin contact

First-aid measures after eye contact

First-aid measures after ingestion

- : IF exposed or concerned: Get medical advice/attention. Call a poison center/doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell. Call a physician immediately.
- : Remove person to fresh air and keep comfortable for breathing.
- : Rinse skin with water/shower. Wash skin with plenty of water. Take off contaminated clothing. Remove/Take off immediately all contaminated clothing. Call a physician immediately. If skin irritation occurs: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention.
- : Rinse eyes with water as a precaution. 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. Call a physician immediately.
- : Rinse mouth. Do not induce vomiting. Call a physician immediately. Call a poison center/doctor/physician if you feel unwell.

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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.

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. Avoid contact with skin and eyes.

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.

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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.

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

Black Bull

No additional information available

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

HEA -	OSHA -	Occupat	ional Ext	ocure I	imite
USA -	USHA -	Occupat	IUIIAI EXI	JUSUIE L	.111111113

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

Carbon Black (1333-86-4)

USA - ACGIH - Occupational Exposure Limits

Local name	Carbon black
ACGIH OEL TWA	3 mg/m³ (Inhalable fraction)
Remark (ACGIH)	TLV® Basis: Bronchitis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2023

USA - OSHA - Occupational Exposure Limits

Local name	Carbon black
OSHA PEL (TWA) [1]	3.5 mg/m³

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Carbon Black (1333-86-4)	
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
Titanium dioxide (13463-67-7)	
USA - ACGIH - Occupational Exposure Lim	nits
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 Limi	its
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 Lim	nits
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 Limit	its
Local name	Cristobalite (Silica: Crystalline)
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
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.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves
Eye protection:
Safety glasses
Skin and body protection:
Wear suitable protective clothing

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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 : Black

Odor : Almost odourless
Odor threshold : No data available
pH : No data available
Melting point : 3000 °F

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 - 2.4Solubility 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 No data available Explosive properties Oxidizing properties No data available

9.2. Other information

No additional information available

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

11.1. Information on toxicological effects	11	.1.	Inform	ation	on to	oxico	logical	effects
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Titanium dioxide (13463-67-7)

рΗ

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

Acute toxicity (inhalation)	: Not classified
Carbon Black (1333-86-4)	
LD50 oral rat	> 10000 mg/kg (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 28 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))
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)	
рН	6 – 7
Carbon Black (1333-86-4)	
рН	4 – 10 (5 %, 20 °C)
Titanium dioxide (13463-67-7)	
рН	7 (aqueous suspension, 10 %)
Silica, crystalline – cristobalite (144	164-46-1)
рН	6 – 7
Sodium silicate (1344-09-8)	
рН	12.8
Serious eye damage/irritation	: Causes serious eye damage.
Crystalline silica (14808-60-7)	
рН	6 – 7
Carbon Black (1333-86-4)	
рН	4 – 10 (5 %, 20 °C)

7 (aqueous suspension, 10 %)

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6 – 7
12.8
Not classified
Not classified
May cause cancer.
1 - Carcinogenic to humans
2B - Possibly carcinogenic to humans
2B - Possibly carcinogenic to humans
Not classified
Not classified
Causes damage to organs through prolonged or repeated exposure.
Causes damage to organs through prolonged or repeated exposure.
Causes damage to organs through prolonged or repeated exposure.
Not classified
Not applicable
Not applicable (solid)
Not applicable (solid)
Not applicable
Not applicable
Burns.
Burns. Serious damage to eyes. Burns.

SECTION 12: Ecological information

12.1. Toxicity

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

Carbon Black (1333-86-4)	
	> 1000 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, Lethal)

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Carbon Black (1333-86-4)			
EC50 - Crustacea [1]	> 5600 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)		
ErC50 algae	> 10000 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)		
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.		
Chemical oxygen demand (COD)	Not applicable (inorganic)		
ThOD	Not applicable (inorganic)		
Carbon Black (1333-86-4)			
Persistence and degradability	Biodegradability in soil: not applicable. 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 (14464-46-1)			
Persistence and degradability	Biodegradability: not applicable.		
Chemical oxygen demand (COD)	Not applicable		
ThOD	Not applicable		
BOD (% of ThOD)	Not applicable		
Sodium silicate (1344-09-8)			
Persistence and degradability	Biodegradability: not applicable.		
Chemical oxygen demand (COD)	Not applicable		
ThOD	Not applicable		
BOD (% of ThOD)	Not applicable		

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12.3. Bioaccumulative potential		
Crystalline silica (14808-60-7)		
Bioaccumulative potential	Bioaccumulation: not applicable.	
Carbon Black (1333-86-4)		
Bioaccumulative potential	Not bioaccumulative.	
Titanium dioxide (13463-67-7)		
Bioaccumulative potential	Not bioaccumulative.	
Silica, crystalline – cristobalite (14464-46-1)		

No test data of component(s) available.

No test data available.

12.4. Mobility in soil

Bioaccumulative potential

Sodium silicate (1344-09-8)
Bioaccumulative potential

Crystalline silica (14808-60-7)		
Ecology - soil No (test)data on mobility of the substance available.		
Carbon Black (1333-86-4)		
Surface tension	Not applicable (solid)	
Ecology - soil	No (test)data on mobility of the substance available. Not toxic to plants. Not toxic to animals.	
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.	
Sodium silicate (1344-09-8)		
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.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

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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

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

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15.2. International regulations

CANADA

Crystalline silica (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List)

Carbon Black (1333-86-4)

Listed on the Canadian DSL (Domestic Substances List)

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)

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)

Carbon Black (1333-86-4)

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

Carbon Black (1333-86-4)					
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

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
Carbon Black(1333-86-4)	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

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Component	State or local regulations
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

SECTION 16: Other information

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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
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 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.