

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : Reno ASAP Clean 18 Z
Product code : 168600

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

Emergency number : 1-800-262-8200 CHEMTREC

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Corrosive to metals, Category 1	H290	May be corrosive to metals.
Carcinogenicity, Category 1A	H350	May cause cancer.
Specific target organ toxicity — Repeated exposure, Category 1	H372	Causes damage to organs through prolonged or repeated exposure.

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H290 - May be corrosive to metals
H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P234 - Keep only in original packaging.
P260 - Do not breathe dust, fume, gas, mist, vapors, spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.

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P308+P313 - If exposed or concerned: Get medical advice/attention.
P314 - Get medical advice or attention if you feel unwell.
P390 - Absorb spillage to prevent material-damage.
P405 - Store locked up.
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

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
Zirconium oxide	CAS-No.: 1314-23-4	0.9 – 13.2	Acute Tox. 4 (Inhalation:dust,mist), H332
Amorphous/fused silica	CAS-No.: 60676-86-0	0.9 – 4.8	STOT RE 2, H373
Silicon carbide	CAS-No.: 409-21-2	1.8 – 3.6	Carc. 1B, H350
Crystalline silica	CAS-No.: 14808-60-7	0.511 – 1.6	Carc. 1A, H350 STOT RE 1, H372
Titanium dioxide	CAS-No.: 13463-67-7	0.1 – 0.85	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.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
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)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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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.

Hygiene measures : Separate working clothes from town clothes. Launder separately. 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 locked up. Store in a well-ventilated place. Keep cool.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

Crystalline silica (14808-60-7)

No additional information available

USA - OSHA - Occupational Exposure Limits

Local name	Quartz (Respirable) (Silica: Crystalline)
Remark (OSHA)	Table Z-3. For OSHA PEL (TWA): Use formulas: $(250 / (\%SiO_2+5))$ for mppcf and $(10 \text{ mg}/m^3 / (\%SiO_2+2))$ for mg/m^3 . CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts

Titanium dioxide (13463-67-7)

No additional information available

USA - ACGIH - Occupational Exposure Limits

Local name	Titanium dioxide
ACGIH® TLV® TWA	0.2 mg/m^3 (Nanoscale particles. R - Respirable particulate matter) 2.5 mg/m^3 (Finescale particles. R - Respirable particulate matter)
Remark (ACGIH)	TLV® Basis: LRT irr; pneumoconiosis. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2025

USA - OSHA - Occupational Exposure Limits

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

Silicon carbide (409-21-2)

No additional information available

USA - ACGIH - Occupational Exposure Limits

Local name	Silicon carbide
ACGIH® TLV® TWA	3 mg/m^3 (Respirable fraction) 0.1 fibers/ cm^3 (Respirable fibers: length > 5 μm ; aspect ratio $\geq 3:1$, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination) 10 mg/m^3 (Inhalable fraction)
	0.1 fibers/ cm^3 (Fibrous (including whiskers). F - Respirable fibers)
Remark (ACGIH)	Non fibrous = TLV® Basis: Pulm dam Fibrous (including whiskers) = TLV® Basis: Lung fibrosis; cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2025

USA - OSHA - Occupational Exposure Limits

Local name	Silicon carbide
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Silicon carbide (409-21-2)

OSHA PEL TWA	15 mg/m ³ (Total dust) 5 mg/m ³ (Respirable fraction)
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Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
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Amorphous/fused silica (60676-86-0)

No additional information available

USA - OSHA - Occupational Exposure Limits

Local name	Silica, fused, respirable dust
OSHA PEL TWA	20 mppcf
Remark (OSHA)	Table Z-3. For OSHA PEL (TWA): Use formula: (80 mg/m ³ / (%SiO ₂)) for mg/m ³ . CAS No. source: eCFR Table Z-1.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts

Zirconium oxide (1314-23-4)

No additional information available

USA - ACGIH - Occupational Exposure Limits

ACGIH® TLV® TWA	5 mg/m ³
ACGIH® TLV® STEL	10 mg/m ³

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.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
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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	: 2.53
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).

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

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Titanium dioxide (13463-67-7)	
LD50 oral rat	> 5000 mg/kg body weight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, 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))
ATE US (vapors)	5.09 mg/l/4h
ATE US (dust, mist)	5.09 mg/l/4h
Silicon carbide (409-21-2)	
LD50 oral rat	> 2000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)
Zirconium oxide (1314-23-4)	
LD50 oral rat	> 5000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LC50 Inhalation - Rat	> 4.3 mg/l (OECD 436: Acute inhalation toxicity-acute toxic class method, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))
ATE US (dust, mist)	1.5 mg/l/4h
Skin corrosion/irritation	: Not classified
Crystalline silica (14808-60-7)	
pH	6 – 7
Titanium dioxide (13463-67-7)	
pH	7 (aqueous suspension, 10 %)
Silicon carbide (409-21-2)	
pH	Not applicable (non-soluble in water), CIPAC MT 75: Determination of pH
Zirconium oxide (1314-23-4)	
pH	Not applicable (non-soluble in water)
Serious eye damage/irritation	: Not classified
Crystalline silica (14808-60-7)	
pH	6 – 7
Titanium dioxide (13463-67-7)	
pH	7 (aqueous suspension, 10 %)
Silicon carbide (409-21-2)	
pH	Not applicable (non-soluble in water), CIPAC MT 75: Determination of pH
Zirconium oxide (1314-23-4)	
pH	Not applicable (non-soluble in water)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.

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Crystalline silica (14808-60-7)	
IARC group	1 - Carcinogenic to humans
Titanium dioxide (13463-67-7)	
IARC group	2B - Possibly carcinogenic to humans
Silicon carbide (409-21-2)	
IARC group	2A - Probably 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.
Amorphous/fused silica (60676-86-0)	
STOT-repeated exposure	May cause 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
Silicon carbide (409-21-2)	
Viscosity, kinematic	Not applicable (solid)
Amorphous/fused silica (60676-86-0)	
Viscosity, kinematic	Not applicable
Zirconium oxide (1314-23-4)	
Viscosity, kinematic	Not applicable (solid)

SECTION 12: Ecological information

12.1. Toxicity

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

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)
Silicon carbide (409-21-2)	
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 48 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

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Zirconium oxide (1314-23-4)	
LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	> 100 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Read-across, GLP)

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)

Titanium dioxide (13463-67-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

Silicon carbide (409-21-2)	
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)

Zirconium oxide (1314-23-4)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

Crystalline silica (14808-60-7)	
Bioaccumulative potential	Not bioaccumulative.

Titanium dioxide (13463-67-7)	
Bioaccumulative potential	Not bioaccumulative.

Silicon carbide (409-21-2)	
Bioaccumulative potential	Not bioaccumulative.

Amorphous/fused silica (60676-86-0)	
Bioaccumulative potential	No bioaccumulation data available.

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Zirconium oxide (1314-23-4)

BCF - Other aquatic organisms [1]	0.64 l/kg (4 h, Chlorella sp., Fresh water, Read-across, Fresh weight)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Crystalline silica (14808-60-7)

Ecology - soil	No (test)data on mobility of the substance available.
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Titanium dioxide (13463-67-7)

Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.

Silicon carbide (409-21-2)

Surface tension	No data available in the literature
Ecology - soil	Low potential for adsorption in soil.

Amorphous/fused silica (60676-86-0)

Ecology - soil	No (test)data on mobility of the substance available.
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Zirconium oxide (1314-23-4)

Ecology - soil	Adsorbs into the soil.
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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
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

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

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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

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)

Silicon carbide (409-21-2)

Listed on the Canadian DSL (Domestic Substances List)

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Amorphous/fused silica (60676-86-0)

Listed on the Canadian DSL (Domestic Substances List)

Zirconium oxide (1314-23-4)

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)

Silicon carbide (409-21-2)

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
Silicon carbide(409-21-2)	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
Zirconium oxide(1314-23-4)	U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

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Revision date : 8/14/2025

Full text of hazard classes and H-statements	
H290	May be corrosive to metals
H332	Harmful if inhaled
H350	May cause cancer.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure

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Full text of hazard classes and H-statements	
H373	May cause damage to organs through prolonged or repeated exposure

Reno Safety Data Sheet (SDS),USA

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