

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Envirostop ASC-5513 H-3 #3  
Product code : 270702

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

Use of the substance/mixture : 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

#### 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

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 labelling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger  
Hazard statements (GHS US) : 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.  
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P280 - Wear protective clothing, eye protection, face protection.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P314 - Get medical advice/attention if you feel unwell.  
P501 - 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)

Not applicable

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

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Name	Product identifier	%	GHS US classification
Crystalline silica	(CAS-No.) 14808-60-7	0 - 16.488	Carc. 1A, H350 STOT RE 1, H372
Silicon carbide	(CAS-No.) 409-21-2	2.5 - 8	Carc. 1B, H350
Solvent naphtha	(CAS-No.) 64742-94-5	0.9 - 2	Flam. Liq. 3, H226 Asp. Tox. 1, H304
Titanium dioxide	(CAS-No.) 13463-67-7	0.234 - 1.134	Carc. 2, H351
Naphthalene	(CAS-No.) 91-20-3	0 - 0.2	Acute Tox. 4 (Oral), H302 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 you feel unwell, seek medical advice. IF exposed or concerned: Get medical advice/attention. Call a poison center or a doctor if you feel unwell. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Give oxygen or artificial respiration if necessary.
- First-aid measures after skin contact : Wash immediately with lots of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. Wash skin with plenty of water.
- First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Rinse eyes with water as a precaution.
- First-aid measures after ingestion : Rinse mouth with water. Call a poison center or a doctor if you feel unwell.

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

- Potential adverse human health effects and symptoms : Causes skin irritation. Harmful if swallowed. Irritation: may cause irritation to the respiratory system.
- Symptoms/effects after inhalation : Possible inflammation of the respiratory tract.
- Symptoms/effects after skin contact : Causes mild skin irritation.
- Symptoms/effects after eye contact : Dust from this product may cause eye irritation.
- Symptoms/effects after ingestion : Irritation of the gastric/intestinal mucosa.

#### 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

No additional information available

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

- Protection during firefighting : Use self-contained breathing apparatus and chemically protective clothing. 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

- General measures : Avoid contact with skin and eyes.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not touch or walk on the spilled product. Prevent dust cloud formation. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapours/spray.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Use self-contained breathing apparatus and chemically protective clothing. 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.

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### 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

- Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.  
Precautions for safe handling : Use only outdoors or in a well-ventilated area. Use personal protective equipment as required. Avoid contact with skin, eyes and clothing. Provide adequate ventilation to minimize dust and/or vapour concentrations. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. 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/vapours/spray.  
Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Observe normal hygiene standards. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product.

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

- Storage conditions : Keep container tightly closed. Store in dry protected location to prevent any moisture contact. Store in a well-ventilated place. Keep cool.  
Maximum storage period : 6 months

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Titanium dioxide (13463-67-7)		
ACGIH	Local name	Titanium dioxide
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
ACGIH	Remark (ACGIH)	TLV® Basis: LRT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup>
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
Crystalline silica (14808-60-7)		
ACGIH	Local name	Silica crystalline - quartz
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup> (Respirable fraction)
ACGIH	Remark (ACGIH)	TLV® Basis: Pulm fibrosis; lung cancer. Notations: A2 (Suspected Human Carcinogen)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	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.
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-3 Mineral Dusts
Silicon carbide (409-21-2)		
ACGIH	Local name	Silicon carbide

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<b>Silicon carbide (409-21-2)</b>		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (Respirable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica) 0.1 fibers/cm <sup>3</sup> (Respirable fibers: length > 5 µm; aspect ratio ≥ 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination) 10 mg/m <sup>3</sup> (Inhalable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica)
ACGIH	Remark (ACGIH)	Non fibrous = TLV® Basis: URT irr Fibrous (including whiskers) = TLV® Basis: Mesothelioma; cancer. Notations: A2 (Suspected Human Carcinogen)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (Total dust) 5 mg/m <sup>3</sup> (Respirable fraction)
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>Solvent naphtha (64742-94-5)</b>		
Not applicable		
<b>Naphthalene (91-20-3)</b>		
ACGIH	Local name	Naphthalene
ACGIH	ACGIH TWA (ppm)	10 ppm
ACGIH	Remark (ACGIH)	TLV® Basis: URT irr; cararacts; hemolytic anemia. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

### 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.

## SECTION 9: Physical and chemical properties

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

Physical state : Solid  
Colour : Black  
Odour : Acrid gasoline-like Tar odour  
Odour threshold : No data available

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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 (butylacetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: Not applicable
Explosive properties	: No data available
Oxidising 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).

### 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

<b>Titanium dioxide (13463-67-7)</b>	
LD50 oral rat	> 5000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value, Oral, 14 day(s))
LC50 inhalation rat (mg/l)	> 6.82 mg/l (Other, 4 h, Rat, Male, Experimental value, Inhalation (dust), 14 day(s))
<b>Silicon carbide (409-21-2)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)
<b>Naphthalene (91-20-3)</b>	
LD50 dermal rat	> 2500 mg/kg (Rat, Dermal)

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<b>Naphthalene (91-20-3)</b>	
ATE US (oral)	533 mg/kg bodyweight
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer.

<b>Titanium dioxide (13463-67-7)</b>	
IARC group	2B - Possibly carcinogenic to humans

<b>Crystalline silica (14808-60-7)</b>	
IARC group	1 - Carcinogenic to humans

<b>Silicon carbide (409-21-2)</b>	
IARC group	2A - Probably carcinogenic to humans

<b>Naphthalene (91-20-3)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicity Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified

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

<b>Crystalline silica (14808-60-7)</b>	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential adverse human health effects and symptoms	: Causes skin irritation. Harmful if swallowed. Irritation: may cause irritation to the respiratory system.
Symptoms/effects after inhalation	: Possible inflammation of the respiratory tract.
Symptoms/effects after skin contact	: Causes mild skin irritation.
Symptoms/effects after eye contact	: Dust from this product may cause eye irritation.
Symptoms/effects after ingestion	: Irritation of the gastric/intestinal mucosa.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

<b>Titanium dioxide (13463-67-7)</b>	
LC50 fish 1	> 100 mg/l (Equivalent or similar to OECD 203, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 (algae)	61 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

<b>Naphthalene (91-20-3)</b>	
LC50 fish 1	0.11 mg/l (96 h, Oncorhynchus mykiss, Literature study)
EC50 Daphnia 1	2.16 mg/l (48 h, Daphnia magna, Literature study)

### 12.2. Persistence and degradability

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

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<b>Crystalline silica (14808-60-7)</b>	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

<b>Silicon carbide (409-21-2)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

<b>Naphthalene (91-20-3)</b>	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	0.22 g O <sub>2</sub> /g substance
ThOD	2.99 g O <sub>2</sub> /g substance

### 12.3. Bioaccumulative potential

<b>Titanium dioxide (13463-67-7)</b>	
Bioaccumulative potential	Not bioaccumulative.

<b>Silicon carbide (409-21-2)</b>	
Bioaccumulative potential	Bioaccumulation: not applicable.

<b>Naphthalene (91-20-3)</b>	
BCF fish 1	23 - 168 (8 week(s), Cyprinus carpio, Literature study)
Log Pow	3.3 (Experimental value)
Log Kow	3.3
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>Titanium dioxide (13463-67-7)</b>	
Ecology - soil	Low potential for mobility in soil.

<b>Naphthalene (91-20-3)</b>	
Surface tension	0.03 N/m (100 °C)
Ecology - soil	Adsorbs into the soil.

### 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

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

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### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

<b>Titanium dioxide (13463-67-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Crystalline silica (14808-60-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Silicon carbide (409-21-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Solvent naphtha (64742-94-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Naphthalene (91-20-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313 Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	100 lb

### 15.2. International regulations

#### CANADA

<b>Titanium dioxide (13463-67-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Crystalline silica (14808-60-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Silicon carbide (409-21-2)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Solvent naphtha (64742-94-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Naphthalene (91-20-3)</b>	
Listed on the Canadian DSL (Domestic Substances List)	

#### EU-Regulations

No additional information available

#### National regulations

<b>Titanium dioxide (13463-67-7)</b>	
Listed on IARC (International Agency for Research on Cancer)	
<b>Crystalline silica (14808-60-7)</b>	
Listed on IARC (International Agency for Research on Cancer)	
<b>Silicon carbide (409-21-2)</b>	
Listed on IARC (International Agency for Research on Cancer)	



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### Naphthalene (91-20-3)

Listed on IARC (International Agency for Research on Cancer)  
Listed as carcinogen on NTP (National Toxicology Program)

### 15.3. US State regulations

Naphthalene (91-20-3)					
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	5.8 µg/day	

Component	State or local regulations
Titanium dioxide(13463-67-7)	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. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Silicon carbide(409-21-2)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
Naphthalene(91-20-3)	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-statements:

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H350	May cause cancer.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

SDS US (GHS HazCom 2012)

*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.*