

## Safety Data Sheet



### Section 1: Identification

#### Product identifier

**Product Name** • **Envirostop RBP**  
**Product Code** • 270100

#### Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** • Refractory applications

#### Details of the supplier of the safety data sheet

**Manufacturer** • Reno Refractories, Inc.  
P O Box 201  
Morris, AL 35116  
United States  
www.renorefractories.com  
sales@renorefractories.com  
**Telephone (General)** • 205-647-0240

#### Emergency telephone number

**Manufacturer** • 1-800-262-8200 - CHEMTREC

### Section 2: Hazard Identification

#### United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

#### Classification of the substance or mixture

**OSHA HCS 2012** • Skin Sensitization 1  
Eye Irritation 2  
Germ Cell Mutagenicity 1A  
Carcinogenicity 1A  
Reproductive Toxicity 1A  
Specific Target Organ Toxicity Repeated Exposure 1

#### Label elements

**OSHA HCS 2012**

**DANGER**



**Hazard statements** • May cause an allergic skin reaction  
Causes serious eye irritation  
May cause genetic defects.

May cause cancer.  
 May damage fertility or the unborn child.  
 Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

**Prevention** • Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Do not breathe dust.  
 Do not eat, drink or smoke when using this product.  
 Contaminated work clothing should not be allowed out of the workplace.  
 Wear protective gloves, clothing, and eye/face protection, .

**Response** • If on skin: Wash with plenty of water .  
 Wash contaminated clothing before reuse.  
 Specific treatment, see supplemental first aid information.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 IF IN EYES: 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.  
 IF exposed or concerned: Get medical advice/attention.

**Storage/Disposal** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Other hazards**

**OSHA HCS 2012** • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

**Canada**

According to: WHMIS

**Classification of the substance or mixture**

**WHMIS** • Toxic - D1B  
 Other Toxic Effects - D2A  
 Other Toxic Effects - D2B

**Label elements**

**WHMIS** •  

**WHMIS** • Toxic - D1B  
 Other Toxic Effects - D2A  
 Other Toxic Effects - D2B

**Other hazards**

**WHMIS** • In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

**Section 3 - Composition/Information on Ingredients**

**Substances**

• Material does not meet the criteria of a substance.

**Mixtures**

Composition				
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive
Aluminum oxide	CAS:1344-28-1	19.6% TO 28.5%	Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s)	OSHA HCS 2012: Not Classified
Quartz	CAS:14808-60-7	< 15.65%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs);
Aluminum(III) silicate (2:1)	CAS:1302-76-7	10.2% TO 13.3%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)
Carbon Coke	Proprietary	4% TO 8%	NDA	OSHA HCS 2012: Not Classified
Resin	Proprietary	3% TO 7%	Ingestion/Oral-Rat LD50 • >5 g/kg	OSHA HCS 2012: Not Classified
Amorphous silica fume	CAS:69012-64-2	2.7% TO 7%	NDA	OSHA HCS 2012: STOT RE 1 (Lungs)
Mullite	CAS:1302-93-8	5.39% TO 6.93%	NDA	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2B
Clay	Proprietary	4.08% TO 6.16%	NDA	OSHA HCS 2012: Not Classified
Silicon carbide	CAS:409-21-2	1.5% TO 6%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)
Silicon	CAS:7440-21-3	1.35% TO 5.6%	Ingestion/Oral-Rat LD50 • 3160 mg/kg	OSHA HCS 2012: Eye Irrit. 2
Zirconium oxide	CAS:1314-23-4	1.4% TO 4.5%	NDA	OSHA HCS 2012: Not Classified
Resinous Carbon	Proprietary	3% TO 4%	NDA	OSHA HCS 2012: Skin Sens. 1; Repr. 1A; Carc. 1A; Muta. 1A;
Antioxidant	Proprietary	0.6% TO 3.85%	Ingestion/Oral-Rat LD50 • 750 mg/kg	OSHA HCS 2012: STOT SE 3: Resp. Irrit.; STOT RE 2 (Lung)
Graphite	CAS:7782-42-5	0.14% TO 3.6%	NDA	OSHA HCS 2012: STOT RE 1 (Lung, Inhl)
Wetting Agent	Proprietary	0.99% TO 2.31%	NDA	OSHA HCS 2012: Not Classified
Wetting Agent	Proprietary	0.99% TO 2.31%	Ingestion/Oral-Rat LD50 • 6400 mg/kg	OSHA HCS 2012: Not Classified
Wetting Agent	Proprietary	0.99% TO 2.31%	Ingestion/Oral-Rat LD50 • >5 g/kg Skin-Rabbit LD50 • >5 g/kg	OSHA HCS 2012: Not Classified
Silica, amorphous	CAS:7631-86-9	< 2.07%	NDA	OSHA HCS 2012: Not Classified
Titanium dioxide	CAS:13463-67-7	0.204% TO 0.861%	NDA	OSHA HCS 2012: Carc. 2
Pitch	CAS:68187-58-6	0.14% TO 0.6%	NDA	OSHA HCS 2012: Not Classified
Wetting Agent	Proprietary	0.175% TO 0.525%	Ingestion/Oral-Rat LD50 • 1900 mg/kg Skin-Rabbit LD50 • >10 g/kg	OSHA HCS 2012: Acute Tox. 4 (orl); Skin Irrit. 2;
Phenol	CAS:108-95-2	< 0.07%	Skin-Rabbit LD50 • 630 mg/kg Ingestion/Oral-Rat LD50 • 317 mg/kg Inhalation-Rat LC50 • 316 mg/m <sup>3</sup> 4 Hour(s)	OSHA HCS 2012: Exposure limits
Propylene glycol	CAS:57-55-6	0.015% TO 0.045%	NDA	OSHA HCS 2012: Skin Irrit. 2; Eye Irrit. 2B WHMIS: Other Toxic Effects - D2B
Cristobalite	CAS:14464-46-1	< 0.041%	NDA	OSHA HCS 2012: Exposure limits
2-Ethylhexanol	CAS:104-76-7	0.005% TO 0.015%	Skin-Rabbit LD50 • 1970 mg/kg	OSHA HCS 2012: Skin Irrit. 2; Eye Irrit. 2; Acute Tox. Dermal 4; STOT SE 3: Narc.; Flam. Liq. 4; Repr. 2 WHMIS: Other Toxic Effects - D2A; Other Toxic

Benzo(a)pyrene	CAS:50-32-8	< 0.002%	NDA	Effects - D2B; Comb. Liq. - B3 OSHA HCS 2012: Exposure limits
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## Section 4: First-Aid Measures

### Description of first aid measures

- Inhalation**
- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.
- Skin**
- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs: Get medical advice/attention.
- Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.
- Ingestion**
- Rinse mouth. Do not give anything by mouth to an unconscious person.

### Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

### Indication of any immediate medical attention and special treatment needed

- Notes to Physician**
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to material other than this product may have occurred.

## Section 5: Fire-Fighting Measures

### Extinguishing media

- Suitable Extinguishing Media**
- This product does not burn or support combustion. Use extinguishing agent suitable for type of surrounding fire.

- Unsuitable Extinguishing Media**
- None known.

### Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- None known.

- Hazardous Combustion Products**
- None known.

### Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Wear positive pressure self-contained breathing apparatus (SCBA).

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not walk through spilled material. Ventilate enclosed areas.

- Emergency Procedures**
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away. Stay upwind.

### Environmental precautions

- No specific actions or treatments recommended related to exposure to this material.

### Methods and material for containment and cleaning up

#### Containment/Clean-up Measures

- Avoid generating dust. Wet down material before clean-up. Use vacuums with high-efficiency particulate air (HEPA) filters or wet-sweeping for clean-up. Never dry sweep or blow dust with compressed air.

## Section 7 - Handling and Storage

### Precautions for safe handling

#### Handling

- Use good safety and industrial hygiene practices. Use only in well ventilated areas. Wear appropriate personal protective equipment, avoid direct contact. Wear long sleeves and/or protective coveralls. Do not breathe dust. Avoid contact with skin, eyes, and clothing. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Contaminated clothing must be vacuumed before removal. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash thoroughly after handling.

### Conditions for safe storage, including any incompatibilities

#### Storage

- Store in a covered location. Keep container closed. Keep from freezing. Storage and work area should be periodically cleaned to minimize dust accumulation.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	Mexico	NIOSH
Benzo(a)pyrene (50-32-8)	TWAs	Not established	exposure by all routes should be carefully controlled to levels as low as possible	0.005 mg/m3 TWAEV	Not established	Not established
Propylene glycol (57-55-6)	TWAs	Not established	10 mg/m3 TWA (for assessing the visibility in a work environment where 1,2-Propylene glycol aerosol is present, aerosol only); 50 ppm TWA (aerosol and vapor); 155 mg/m3 TWA (aerosol and vapor)	Not established	Not established	Not established
Cristobalite (14464-46-1)	TWAs	0.025 mg/m3 TWA (respirable particulate matter)	0.05 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.05 mg/m3 TWAEV (respirable dust)	0.05 mg/m3 TWA VLE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
Phenol (108-95-2)	STELs	Not established	Not established	Not established	10 ppm STEL [PPT-CT]; 38 mg/m3 STEL [PPT-CT]	Not established
	TWAs	5 ppm TWA	5 ppm TWA	5 ppm TWAEV; 19 mg/m3 TWAEV	5 ppm TWA VLE-PPT; 19 mg/m3 TWA VLE-PPT	5 ppm TWA; 19 mg/m3 TWA

	Ceilings	Not established	Not established	Not established	Not established	15.6 ppm Ceiling (15 min); 60 mg/m <sup>3</sup> Ceiling (15 min)
Graphite (7782-42-5)	TWAs	2 mg/m <sup>3</sup> TWA (all forms except graphite fibers, respirable particulate matter)	2 mg/m <sup>3</sup> TWA (except Graphite fibres, respirable)	2 mg/m <sup>3</sup> TWAEV (containing no Asbestos and <1% Crystalline silica, except Graphite fibres, respirable dust)	2 mg/m <sup>3</sup> TWA VLE-PPT (synthetic and natural)	2.5 mg/m <sup>3</sup> TWA (natural, respirable dust)
Titanium dioxide (13463-67-7)	STELs	Not established	Not established	Not established	20 mg/m <sup>3</sup> STEL [PPT-CT] (as Ti)	Not established
	TWAs	10 mg/m <sup>3</sup> TWA	10 mg/m <sup>3</sup> TWA	10 mg/m <sup>3</sup> TWAEV (containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m <sup>3</sup> TWA VLE-PPT (as Ti)	Not established
Silicon (7440-21-3)	STELs	Not established	Not established	Not established	20 mg/m <sup>3</sup> STEL [PPT-CT]	Not established
	TWAs	Not established	Not established	10 mg/m <sup>3</sup> TWAEV (containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m <sup>3</sup> TWA VLE-PPT (inhalable fraction)	10 mg/m <sup>3</sup> TWA (total dust); 5 mg/m <sup>3</sup> TWA (respirable dust)
Silicon carbide (409-21-2)	STELs	Not established	Not established	Not established	20 mg/m <sup>3</sup> STEL [PPT-CT]	Not established
	TWAs	10 mg/m <sup>3</sup> TWA (nonfibrous, inhalable particulate matter, particulate matter containing no asbestos and <1% crystalline silica); 3 mg/m <sup>3</sup> TWA (nonfibrous, respirable particulate matter, particulate matter containing no asbestos and <1% crystalline silica); 0.1 fiber/cm <sup>3</sup> TWA (as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination., respirable fibers, including whiskers, length >5 µm, aspect ratio >=3:1)	10 mg/m <sup>3</sup> TWA (non-fibrous, containing no Asbestos and <1% Crystalline silica, inhalable); 3 mg/m <sup>3</sup> TWA (non-fibrous, containing no Asbestos and <1% Crystalline silica, respirable); 0.1 fibre/cm <sup>3</sup> TWA (fibrous, including whiskers, fibres >5 µm in length and an aspect ratio >=3:1 as determined by the membrane filter method at 400-450 times magnification (4 -mm objective), using phase-contrast illumination, respirable)	10 mg/m <sup>3</sup> TWAEV (non fibrous, containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m <sup>3</sup> TWA VLE-PPT	10 mg/m <sup>3</sup> TWA (total dust); 5 mg/m <sup>3</sup> TWA (respirable dust)
Silica, amorphous (7631-86-9)	TWAs	Not established	Not established	Not established	Not established	6 mg/m <sup>3</sup> TWA
Amorphous silica			2 mg/m <sup>3</sup> TWA	2 mg/m <sup>3</sup> TWAEV (containing no	2 mg/m <sup>3</sup> TWA VLE-PPT; 10 mg/m <sup>3</sup> TWA VLE-PPT (inhalable	

fume (69012-64-2)	TWAs	Not established	(respirable, listed under Silica fume)	Asbestos and <1% Crystalline silica, respirable dust)	particulate); 3 mg/m3 TWA VLE-PPT (respirable particulate)	Not established
Resinous Carbon (Proprietary)	TWAs	Not established	Not established	Not established	10 mg/m3 TWA VLE-PPT	Not established
Clay (Proprietary)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [PPT-CT]	Not established
	TWAs	2 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter)	2 mg/m3 TWA (containing no Asbestos and <1% Crystalline silica, respirable)	5 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, respirable dust)	10 mg/m3 TWA VLE-PPT	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)
Quartz (14808-60-7)	TWAs	0.025 mg/m3 TWA (respirable particulate matter)	0.10 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.1 mg/m3 TWAEV (respirable dust)	0.1 mg/m3 TWA VLE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
Aluminum oxide (1344-28-1)	TWAs	Not established	Not established	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, as Al)	10 mg/m3 TWA VLE-PPT	Not established

**Exposure Limits/Guidelines (Con't.)**

	Result	OSHA	Other Agency Information
Benzo(a)pyrene (50-32-8)	TWAs	0.2 mg/m3 TWA (listed under Coal tar pitch volatiles)	Not established
Propylene glycol (57-55-6)	TWAs	Not established	10 mg/m3 TWA
Cristobalite (14464-46-1)	TWAs	50 µg/m3 TWA (listed under Respirable crystalline silica)	Not established
Phenol (108-95-2)	TWAs	5 ppm TWA; 19 mg/m3 TWA	Not established
Graphite (7782-42-5)	TWAs	15 mg/m3 TWA (synthetic, total dust); 5 mg/m3 TWA (synthetic, respirable fraction)	Not established
Titanium dioxide (13463-67-7)	TWAs	15 mg/m3 TWA (total dust)	Not established
Silicon (7440-21-3)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not established
Silicon carbide (409-21-2)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not established
Clay (Proprietary)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not established
Quartz (14808-60-7)	TWAs	50 µg/m3 TWA (listed under Respirable crystalline silica)	Not established
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not established

**Exposure Control Notations  
Mexico**

- Phenol (108-95-2): **Skin:** (Skin - potential for cutaneous absorption)

#### Canada Ontario

- Phenol (108-95-2): **Skin:** (Danger of cutaneous absorption)
- Cristobalite (14464-46-1): **Designated Substances:** (0.05 mg/m<sup>3</sup> TWA (respirable fraction, listed under Silica, crystalline))
- Quartz (14808-60-7): **Designated Substances:** (0.10 mg/m<sup>3</sup> TWA (respirable fraction, listed under Silica, crystalline))

#### Canada Quebec

- Phenol (108-95-2): **Skin:** (Skin designation)
- Quartz (14808-60-7): **Carcinogens:** (C2 carcinogen - effect suspected in humans)
- Benzo(a)pyrene (50-32-8): **Carcinogens:** (C2 carcinogen - effect suspected in humans)

#### ACGIH

- Phenol (108-95-2): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen) | **Skin:** (Skin - potential significant contribution to overall exposure by the cutaneous route)
- Clay (Proprietary): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Cristobalite (14464-46-1): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Quartz (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Silicon carbide (409-21-2): **Carcinogens:** (A2 - Suspected Human Carcinogen (fibrous, including whiskers))
- Benzo(a)pyrene (50-32-8): **Carcinogens:** (A2 - Suspected Human Carcinogen)

## Exposure Limits Supplemental

### OSHA

- Cristobalite (14464-46-1): **Mineral Dusts:** ((1/2)(250)/( %SiO<sub>2</sub> + 5) mppcf TWA, respirable fraction; (1/2)(10)/( %SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, respirable fraction)
- Quartz (14808-60-7): **Mineral Dusts:** ((250)/( %SiO<sub>2</sub> + 5) mppcf TWA, respirable fraction; (10)/( %SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, respirable fraction)
- Silica, amorphous (7631-86-9): **Mineral Dusts:** (20 mppcf TWA; (80)/( % SiO<sub>2</sub>) mg/m<sup>3</sup> TWA)
- Graphite (7782-42-5): **Mineral Dusts:** (15 mppcf TWA (natural))

### ACGIH

- Phenol (108-95-2): **BEIs:** (250 mg/g creatinine Medium: urine Time: end of shift Parameter: Phenol with hydrolysis (background, nonspecific)) | **TLV Basis - Critical Effects:** (CNS impairment; lung damage; upper respiratory tract irritation)
- Clay (Proprietary): **TLV Basis - Critical Effects:** (pneumoconiosis)
- Titanium dioxide (13463-67-7): **TLV Basis - Critical Effects:** (lower respiratory tract irritation)
- Cristobalite (14464-46-1): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Quartz (14808-60-7): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Silicon carbide (409-21-2): **TLV Basis - Critical Effects:** (upper respiratory tract irritation (nonfibrous); cancer (fibrous, including whiskers); mesothelioma (fibrous, including whiskers))
- Benzo(a)pyrene (50-32-8): **BEIs:** (Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)) | **TLV Basis - Critical Effects:** (cancer) | **No Adopted Value:** (Exposure by all routes should be carefully controlled to levels as low as possible)
- Graphite (7782-42-5): **TLV Basis - Critical Effects:** (pneumoconiosis (all forms except graphite fibers))

## Exposure controls

### Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Personal Protective Equipment

#### Respiratory

- For limited exposure use an N95 dust mask. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

#### Eye/Face

- Wear safety goggles.

#### Skin/Body

- Wear long sleeves and/or protective coveralls.

### General Industrial Hygiene Considerations

- Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes or on skin or clothing. Wash thoroughly with soap and water after handling and



before eating, drinking, or using tobacco.

**Environmental Exposure Controls**

- Follow best practice for site management and disposal of waste. Dispose of in an approved landfill.

**Key to abbreviations**

ACGIH = American Conference of Governmental Industrial Hygiene

STEV = Short Term Exposure Value

NIOSH = National Institute of Occupational Safety and Health

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

OSHA = Occupational Safety and Health Administration

TWAEV = Time-Weighted Average Exposure Value

STEL = Short Term Exposure Limits are based on 15-minute exposures

**Section 9 - Physical and Chemical Properties**

**Information on Physical and Chemical Properties**

<b>Material Description</b>			
Physical Form	Solid	Appearance/Description	Dark, granular dry powder.
Color	Dark	Odor	No data available
Particulate Size	600 µ	Odor Threshold	No data available
<b>General Properties</b>			
Boiling Point	No data available	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	2.7 to 2.9 Water=1	Water Solubility	Negligible < 0.1 %
Viscosity	No data available		
<b>Volatility</b>			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available	VOC (Wt.)	0 %
VOC (Vol.)	0 %		
<b>Flammability</b>			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
<b>Environmental</b>			
Octanol/Water Partition coefficient	No data available		

**Section 10: Stability and Reactivity**

**Reactivity**

- No dangerous reaction known under conditions of normal use.

**Chemical stability**

- Stable under normal temperatures and pressures.

**Possibility of hazardous reactions**

- Hazardous polymerization will not occur.

**Conditions to avoid**

- No data available.

**Incompatible materials**

- No data available

## Hazardous decomposition products

- No data available

### Section 11 - Toxicological Information

#### Information on toxicological effects

Components		
Wetting Agent (0.99% TO 2.31%)	Proprietary	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • >5 g/kg; Skin-Rabbit LD50 • >5 g/kg
Clay (4.08% TO 6.16%)	Proprietary	<b>Multi-dose Toxicity:</b> Inhalation-Rat TCLo • 30 mg/m <sup>3</sup> 96 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; Lungs, Thorax, or Respiration:Tumors;</i> <b>Reproductive:</b> Ingestion/Oral-Rat TDL0 • 370 g/kg (37D pre/1-22D preg); <i>Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Effects on Newborn:Other neonatal measures or effects.</i>
Titanium dioxide (0.204% TO 0.861%)	13463-67-7	<b>Irritation:</b> Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; <b>Tumorigen / Carcinogen:</b> Inhalation-Rat TCLo • 250 mg/m <sup>3</sup> 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i>
Wetting Agent (0.175% TO 0.525%)	Proprietary	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 1900 mg/kg; <b>Irritation:</b> Skin-Rabbit • 10 mg 24 Hour(s) • Moderate irritation; <b>Reproductive:</b> Ingestion/Oral-Rat TDL0 • 8820 mg/kg (multigeneration); <i>Reproductive Effects:Effects on Newborn:Other postnatal measures or effects</i>
Wetting Agent (0.99% TO 2.31%)	Proprietary	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 11300 mg/kg
Antioxidant (0.6% TO 3.85%)	Proprietary	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 30 g/kg; <i>Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain;</i> <b>Multi-dose Toxicity:</b> Inhalation-Rat TCLo • 150 mg/m <sup>3</sup> 4 Hour(s) 78 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Liver:Other changes; Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain</i>
Silicon (1.35% TO 5.6%)	7440-21-3	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 3160 mg/kg; <b>Irritation:</b> Eye-Rabbit • 3 mg • Mild irritation
Silica, amorphous (< 2.07%)	7631-86-9	<b>Irritation:</b> Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Resin (3% TO 7%)	Proprietary	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • >5 g/kg; Skin-Rat LD50 • >2 g/kg
2-Ethylhexanol (0.005% TO 0.015%)	104-76-7	<b>Acute Toxicity:</b> Inhalation-Guinea Pig TCLo • 227 ppm 6 Hour(s); <i>Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Dyspnea;</i> Inhalation-Mouse TCLo • 227 ppm 6 Hour(s); <i>Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Dyspnea;</i> Inhalation-Rat TCLo • 227 ppm 6 Hour(s); <i>Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Dyspnea;</i> <b>Irritation:</b> Eye-Rabbit • 20 mg • Severe irritation; Skin-Rabbit • 0.5 mL • Severe irritation; <b>Multi-dose Toxicity:</b> Ingestion/Oral-Rat TDL0 • 2970 mg/kg 9 Day(s)-Intermittent; <i>Behavioral:Changes in motor activity (specific assay); Behavioral:Ataxia; Behavioral:Muscle contraction or spasticity;</i> <b>Reproductive:</b> Ingestion/Oral-Rat TDL0 • 1628 mg/kg (12D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system; Reproductive Effects:Specific Developmental Abnormalities:Urogenital system;</i> Ingestion/Oral-Rat TDL0 • 6500 mg/kg (6-15D preg); <i>Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus);</i> <b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse TDL0 • 270000 mg/kg 72 Week(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Liver:Tumors; Tumorigenic:Increased incidence of tumors in susceptible strains</i>

Propylene glycol (0.015% TO 0.045%)	57-55-6	<b>Multi-dose Toxicity:</b> Ingestion/Oral-Dog TDLo • 3650 mg/kg 2 Year(s)-Intermittent; <i>Blood:</i> <b>Normocytic anemia;</b> <i>Blood:</i> <b>Other hemolysis with or without anemia;</b> Skin-Human TDLo • 5 mg/kg 7 Day(s)-Intermittent; <i>Skin and Appendages:</i> <b>After topical exposure:Primary irritation;</b> Skin-Man TDLo • 0.03 mL/kg 22 Day(s)-Intermittent; <i>Skin and Appendages:</i> <b>After topical exposure:Cutaneous sensitization (experimental)</b>
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GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • No data available
Skin corrosion/Irritation	OSHA HCS 2012 • No data available
Serious eye damage/Irritation	OSHA HCS 2012 • Eye Irritation 2
Skin sensitization	OSHA HCS 2012 • Skin Sensitizer 1
Respiratory sensitization	OSHA HCS 2012 • No data available
Aspiration Hazard	OSHA HCS 2012 • No data available
Carcinogenicity	OSHA HCS 2012 • Carcinogenicity 1A
Germ Cell Mutagenicity	OSHA HCS 2012 • Germ Cell Mutagenicity 1A
Toxicity for Reproduction	OSHA HCS 2012 • Toxic to Reproduction 1A
STOT-SE	OSHA HCS 2012 • No data available
STOT-RE	OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1

**Target Organs**

- [[206]]

**Route(s) of entry/exposure**

- Inhalation, Skin, Eye, and Ingestion

**Medical Conditions Aggravated by Exposure**

- Any pre-existing conditions of the lungs.

**Potential Health Effects**

**Inhalation**

**Acute (Immediate)**

- Nuisance dust may affect the lungs but reactions are typically reversible.

**Chronic (Delayed)**

- Chronic overexposure to dust containing respirable sized crystalline silica can cause delayed lung injury (silicosis).

**Skin**

**Acute (Immediate)**

- May cause skin sensitization. Symptoms include redness, and skin rash. Exposure to dust may cause mechanical irritation.

**Chronic (Delayed)**

- No data available.

**Eye**

**Acute (Immediate)**

- Causes serious eye irritation. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.

**Chronic (Delayed)**

- No data available.

**Ingestion**

**Acute (Immediate)**

- Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.

**Chronic (Delayed)**

- No data available.

**Mutagenic Effects**

- Repeated and prolonged exposure may cause mutagenic effects.

**Carcinogenic Effects**

- May cause cancer.

Carcinogenic Effects			
	CAS	IARC	NTP
Benzo(a)pyrene	50-32-8	Group 1-Carcinogenic	Reasonably Anticipated to be Human Carcinogen
Cristobalite	14464-46-1	Group 1-Carcinogenic	Not Listed
Titanium dioxide	13463-67-7	Group 2B-Possible Carcinogen	Not Listed

Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen
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**Reproductive Effects**      • Repeated and prolonged exposure may cause reproductive effects.

**Key to abbreviations**

LD = Lethal Dose  
 TC = Toxic Concentration  
 TD = Toxic Dose

**Section 12 - Ecological Information**

**Toxicity**

- Material data lacking.

**Persistence and degradability**

- Material data lacking.

**Bioaccumulative potential**

- Material data lacking.

**Mobility in Soil**

- Material data lacking.

**Other adverse effects**

- No studies have been found.

**Section 13 - Disposal Considerations**

**Waste treatment methods**

- Product waste**      • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
- Packaging waste**      • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Section 14 - Transport Information**

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not Regulated	NDA	NDA	NDA

**Special precautions for user**      • None specified.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**      • No data available

**Section 15 - Regulatory Information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**SARA Hazard Classifications • Acute, Chronic**

State Right To Know				
Component	CAS	MA	NJ	PA
Wetting Agent	Proprietary	No	No	No
2-Ethylhexanol	104-76-7	Yes	No	Yes
Wetting Agent	Proprietary	No	No	No
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Aluminum(III) silicate (2:1)	1302-76-7	No	No	No
Benzo(a)pyrene	50-32-8	Yes	Yes	Yes
Wetting Agent	Proprietary	No	No	No
Carbon Coke	Proprietary	No	No	No
Cristobalite	14464-46-1	Yes	Yes	Yes
Graphite	7782-42-5	Yes	Yes	Yes
Antioxidant	Proprietary	No	No	No
Clay	Proprietary	Yes	Yes	Yes
Mullite	1302-93-8	No	No	No
Phenol	108-95-2	Yes	Yes	Yes
Resin	Proprietary	No	No	No
Pitch	68187-58-6	No	No	No
Resinous Carbon	Proprietary	No	No	No
Propylene glycol	57-55-6	No	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Amorphous silica fume	69012-64-2	No	No	No
Silica, amorphous	7631-86-9	Yes	Yes	Yes
Silicon	7440-21-3	Yes	Yes	Yes
Silicon carbide	409-21-2	Yes	Yes	Yes
Wetting Agent	Proprietary	No	No	No
Titanium dioxide	13463-67-7	Yes	Yes	Yes
Zirconium oxide	1314-23-4	Yes	No	No

Inventory			
Component	CAS	Canada DSL	TSCA
Wetting Agent	Proprietary	Yes	Yes
2-Ethylhexanol	104-76-7	Yes	Yes
Wetting Agent	Proprietary	Yes	Yes
Aluminum oxide	1344-28-1	Yes	Yes
Aluminum(III) silicate (2:1)	1302-76-7	Yes	No
Benzo(a)pyrene	50-32-8	Yes	Yes
Wetting Agent	Proprietary	Yes	Yes
Carbon Coke	Proprietary	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes

Graphite	7782-42-5	Yes	Yes
Antioxidant	Proprietary	Yes	Yes
Clay	Proprietary	Yes	Yes
Mullite	1302-93-8	Yes	Yes
Phenol	108-95-2	Yes	Yes
Resin	Proprietary	Yes	Yes
Pitch	68187-58-6	Yes	Yes
Resinous Carbon	Proprietary	Yes	Yes
Propylene glycol	57-55-6	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Amorphous silica fume	69012-64-2	Yes	Yes
Silica, amorphous	7631-86-9	Yes	Yes
Silicon	7440-21-3	Yes	Yes
Silicon carbide	409-21-2	Yes	Yes
Wetting Agent	Proprietary	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes
Zirconium oxide	1314-23-4	Yes	Yes

## Canada

### Labor

#### Canada - WHMIS 1988 - Classifications of Substances

• Benzo(a)pyrene	50-32-8	D2A
• Clay	Proprietary	D2A
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	D1A, E
• Propylene glycol	57-55-6	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Titanium dioxide, mixture containing on Health Canada's WHMIS Division website.)
• Titanium dioxide	13463-67-7	Uncontrolled product according to WHMIS classification criteria
• Aluminum oxide	1344-28-1	B4
• Silicon	7440-21-3	Uncontrolled product according to WHMIS classification criteria
• Silicon carbide	409-21-2	Uncontrolled product according to WHMIS
• Antioxidant	Proprietary	Uncontrolled product according to WHMIS

		classification criteria
		D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Cristobalite	14464-46-1	
• Silica, amorphous	7631-86-9	Uncontrolled product according to WHMIS classification criteria
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	B3, D2B
• Zirconium oxide	1314-23-4	Uncontrolled product according to WHMIS classification criteria
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
		D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Quartz	14808-60-7	
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	D2A (natural); D2B (synthetic)
• Resinous Carbon	<i>Proprietary</i>	Not Listed
<b>Canada - WHMIS 1988 - Ingredient Disclosure List</b>		
• Benzo(a)pyrene	50-32-8	0.1 %
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	1 %
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	1 %
• Propylene glycol	57-55-6	1 %
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	1 %
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	1 %
• Silica, amorphous	7631-86-9	1 %
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	1 %
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	1 %
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**Environment**

**Canada - CEPA - Priority Substances List**

• Benzo(a)pyrene	50-32-8	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Priority Substance List 2 (substance not considered toxic)
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**United States**

**Environment**

**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

• Benzo(a)pyrene	50-32-8	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed



• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**

• Benzo(a)pyrene	50-32-8	1 lb final RQ; 0.454 kg final RQ
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	1000 lb final RQ; 454 kg final RQ
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**

• Benzo(a)pyrene	50-32-8	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	1000 lb EPCRA RQ
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed

• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**

• Benzo(a)pyrene	50-32-8	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	500 lb lower TPQ; 10000 lb upper TPQ
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

• Benzo(a)pyrene	50-32-8	0.1 % Supplier notification limit (listed under Chemical Category N590, Polycyclic aromatic compounds)
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed

• Phenol	108-95-2	1.0 % de minimis concentration
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**

• Benzo(a)pyrene	50-32-8	100 lb RT (listed under Polycyclic aromatic compounds)
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Not Listed
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - EPA - Designated Generic Categories - Polycyclic Aromatic Compounds**

• Benzo(a)pyrene	50-32-8	
• Clay	<i>Proprietary</i>	Not Listed

• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Not Listed
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	Proprietary	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	Proprietary	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	Proprietary	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	Proprietary	Not Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII**

• Benzo(a)pyrene	50-32-8	Included in waste streams: F032, F034, F037, F038, F039, K001, K035, K141, K142, K144, K145, K147, K148, K170
• Clay	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Included in waste streams: F039, K001, K022, K087
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	Proprietary	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	Proprietary	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	Proprietary	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed

• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261**

• Benzo(a)pyrene	50-32-8	waste number U022
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	waste number U188
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents**

• Benzo(a)pyrene	50-32-8	
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed

• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards**

• Benzo(a)pyrene	50-32-8	0.061 mg/L (wastewater); 3.4 mg/kg (nonwastewater)
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	0.039 mg/L (wastewater); 6.2 mg/kg (nonwastewater)
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring**

• Benzo(a)pyrene	50-32-8	
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics**

• Benzo(a)pyrene	50-32-8	waste number U022
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	waste number U188
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**United States - California**

**Environment**

**U.S. - California - Proposition 65 - Carcinogens List**

• Benzo(a)pyrene	50-32-8	carcinogen, 7/1/1987
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Not Listed
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	carcinogen, 9/2/2011 (airborne, unbound particles of

		respirable size)
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

• Benzo(a)pyrene	50-32-8	0.06 µg/day NSRL
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Not Listed
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**United States - Pennsylvania**

**Labor**

**U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

• Benzo(a)pyrene	50-32-8	
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed



• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances**

• Benzo(a)pyrene	50-32-8	
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Phenol	108-95-2	Not Listed
• Propylene glycol	57-55-6	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Silicon carbide	409-21-2	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Carbon Coke	<i>Proprietary</i>	Not Listed
• 2-Ethylhexanol	104-76-7	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Resin	<i>Proprietary</i>	Not Listed
• Pitch	68187-58-6	Not Listed
• Quartz	14808-60-7	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
• Graphite	7782-42-5	Not Listed
• Resinous Carbon	<i>Proprietary</i>	Not Listed

**Other Information**

- **WARNING:** This product contains a chemical known to the State of California to cause cancer.

**Section 16 - Other Information**

- Revision Date** • 26/April/2018
- Last Revision Date** • 27/February/2018
- Preparation Date** • 06/September/2017
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**Key to abbreviations**

NDA = No data available