

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name • **Envirostop ASC-5510 RP**
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
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
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.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.

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

- 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	Comments

Aluminum oxide	CAS: 1344-28-1	23.8% TO 37.05%	NDA	OSHA HCS 2012: Not Classified	NDA
Aluminum(III) silicate (2:1)	CAS: 1302-76-7	11.9% TO 19%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Quartz	CAS: 14808-60-7	9% TO 17.14%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs)	NDA
Coke Carbon	<i>Proprietary</i>	4% TO 8%	NDA	OSHA HCS 2012: Not Classified	NDA
Silicon carbide	CAS: 409-21-2	2.7% TO 7%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Glycol	<i>Proprietary</i>	2.9% TO 7%	Skin-Rabbit LD50 • 11890 mg/kg Ingestion/Oral-Rat LD50 • 12000 mg/kg	OSHA HCS 2012: Eye Irrit. 2B; STOT SE 3: Narc.	NDA
Amorphous silica fume	CAS: 69012-64-2	3% TO 7%	NDA	OSHA HCS 2012: STOT RE 1 (Lungs)	NDA
Clay	<i>Proprietary</i>	2.04% TO 6.16%	NDA	OSHA HCS 2012: Not Classified	NDA
Zirconium oxide	CAS: 1314-23-4	1.7% TO 5.85%	NDA	OSHA HCS 2012: Not Classified	NDA
Resin	<i>Proprietary</i>	2% TO 5%	Ingestion/Oral-Rat LD50 • >5 g/kg Skin-Rat LD50 • >2 g/kg	OSHA HCS 2012: Not Classified	NDA
Antioxidant	<i>Proprietary</i>	1% TO 5%	Skin-Rabbit LD50 • >20 g/kg	OSHA HCS 2012: STOT RE 2 (Lungs); Water-react. 3	NDA
Graphite	CAS: 7782-42-5	0.17% TO 4.68%	NDA	OSHA HCS 2012: STOT RE 1 (Lungs, Inhl)	NDA
Silicon	CAS: 7440-21-3	0.5% TO 4%	Ingestion/Oral-Rat LD50 • 3160 mg/kg	OSHA HCS 2012: Eye Irrit. 2	NDA
Pitch	CAS: 68187-58-6	1.17% TO 3.28%	NDA	OSHA HCS 2012: Not Classified	NDA
Resinous Carbon	<i>Proprietary</i>	1% TO 3%	NDA	OSHA HCS 2012: Skin Sens. 1; Repr. 1A; Carc. 1A; Muta. 1A	NDA
Iron	CAS: 7439-89-6	0.2% TO 2.75%	Ingestion/Oral-Rat LD50 • 30 g/kg	OSHA HCS 2012: STOT SE 3, Resp. Irrit.; STOT RE 2 (Lung)	NDA
Titanium dioxide	CAS: 13463-67-7	0.19% TO 1.161%	NDA	OSHA HCS 2012: Carc. 2	NDA
Boric acid	CAS: 10043-35-3	< 0.5%	Ingestion/Oral-Rat LD50 • 2660 mg/kg	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2A; Other Toxic Effects - D2B	NDA
Silica, amorphous	CAS: 7631-86-9	0.03% TO 0.35%	NDA	OSHA HCS 2012: Not Classified	NDA
Ethylene glycol	CAS: 107-21-1	0% TO 0.14%	Skin-Rabbit LD50 • 9530 µL/kg Ingestion/Oral-Rat LD50 • 4700 mg/kg	OSHA HCS 2012: Eye Irrit. 2A; STOT SE 1 (Kidneys); STOT SE 3: Narc. & Resp. Irrit.; Repr. 2	NDA
Phenol	CAS: 108-95-2	< 0.125%	Skin-Rabbit LD50 • 630 mg/kg Ingestion/Oral-Rat LD50 • 512 mg/kg Inhalation-Rat LC50 • 316 mg/m ³ 4 Hour(s)	OSHA HCS 2012: Exposure limit(s)	NDA
Cristobalite	CAS: 14464-46-1	0% TO 0.02%	NDA	OSHA HCS 2012: Exposure limit(s)	NDA
Benzo(a)pyrene	CAS: 50-32-8	0% TO 0.007%	NDA	OSHA HCS 2012: Exposure limit(s)	NDA
Benz(a)anthracene	CAS: 56-55-3	0.0012% TO 0.00625%		OSHA HCS 2012: WHMIS:	NDA

Dibenz(a,h) anthracene	CAS:53-70-3	< 0.0025%		OSHA HCS 2012: WHMIS:	NDA
Benzo(j) fluoranthene	CAS:205-82-3	< 0.0025%		OSHA HCS 2012: WHMIS:	NDA
Benzo(k) fluoranthene	CAS:207-08-9	< 0.00125%		OSHA HCS 2012: WHMIS:	NDA
Hardener	Proprietary	< 0.0005%	Ingestion/Oral-Rat LD50 • 100 mg/kg	OSHA HCS 2012: Exposure limit(s)	NDA

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

- Do not use in areas without adequate ventilation. Do not breathe dust. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage

- Store in a covered location. 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
Ethylene glycol (107-21-1)	Ceilings	100 mg/m3 Ceiling (aerosol only)	100 mg/m3 Ceiling (aerosol only)	50 ppm Ceiling (mist and vapour); 127 mg/m3 Ceiling (mist and vapour)	100 mg/m3 Ceiling (aerosol)	Not established
Cristobalite (14464-46-1)	TWAs	0.025 mg/m3 TWA (respirable fraction)	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 LMPE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
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
Hardener (Proprietary)	Ceilings	0.3 ppm Ceiling	1.5 ppm Ceiling	2 ppm Ceiling; 3 mg/m3 Ceiling	2 ppm Ceiling; 3 mg/m3 Ceiling	0.1 ppm Ceiling (15 min)
	STELs	Not established	1.0 ppm STEL	Not established	Not established	Not established
	TWAs	Not established	Not established	Not established	Not established	0.016 ppm TWA
Benz(a)anthracene (56-55-3)	TWAs	Not established	exposure by all routes should be carefully controlled to levels as low as possible	Not established	Not established	Not established
Silica, amorphous (7631-86-9)	TWAs	Not established	Not established	Not established	Not established	6 mg/m3 TWA

Phenol (108-95-2)	STELs	Not established	Not established	Not established	10 ppm STEL [LMPE-CT]; 38 mg/m3 STEL [LMPE-CT]	Not established
	TWAs	5 ppm TWA	5 ppm TWA	5 ppm TWAEV; 19 mg/m3 TWAEV	5 ppm TWA LMPE-PPT; 19 mg/m3 TWA LMPE-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/m3 Ceiling (15 min)
Graphite (7782-42-5)	TWAs	2 mg/m3 TWA (all forms except graphite fibers, respirable fraction)	2 mg/m3 TWA (except Graphite fibres, respirable)	2 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, except Graphite fibres, respirable dust)	2 mg/m3 TWA LMPE-PPT (synthetic and natural)	2.5 mg/m3 TWA (natural, respirable dust)
Titanium dioxide (13463-67-7)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [LMPE-CT] (as Ti)	Not established
	TWAs	10 mg/m3 TWA	10 mg/m3 TWA	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m3 TWA LMPE-PPT (as Ti)	Not established
Silicon (7440-21-3)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [LMPE-CT]	Not established
	TWAs	Not established	10 mg/m3 TWA (total dust)	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m3 TWA LMPE-PPT (inhalable fraction)	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)
Boric acid (10043-35-3)	STELs	6 mg/m3 STEL (inhalable fraction, listed under Borate compounds, inorganic)	6 mg/m3 STEL (inhalable, listed under Borate compounds, inorganic)	Not established	Not established	Not established
	TWAs	2 mg/m3 TWA (inhalable fraction, listed under Borate compounds, inorganic)	2 mg/m3 TWA (inhalable, listed under Borate compounds, inorganic)	Not established	Not established	Not established
Resinous Carbon (Proprietary)	TWAs	Not established	Not established	Not established	10 mg/m3 TWA LMPE-PPT	Not established
Clay (Proprietary)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [LMPE-CT]	Not established
	TWAs	2 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)	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 LMPE-PPT	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)
	STELs	Not established	Not established	Not established	20 mg/m3 STEL [LMPE-CT]	Not established
		10 mg/m3 TWA (nonfibrous, inhalable fraction, particulate)	10 mg/m3 TWA (non-fibrous, containing no			

Silicon carbide (409-21-2)	TWAs	matter containing no asbestos and <1% crystalline silica); 3 mg/m3 TWA (nonfibrous, respirable fraction, particulate matter containing no asbestos and <1% crystalline silica); 0.1 fiber/cm3 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)	Asbestos and <1% Crystalline silica, inhalable); 3 mg/m3 TWA (non-fibrous, containing no Asbestos and <1% Crystalline silica, respirable); 0.1 fibre/cm3 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/m3 TWAEV (non fibrous, containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m3 TWA LMPE -PPT	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)
Amorphous silica fume (69012-64-2)	TWAs	Not established	2 mg/m3 TWA (respirable, listed under Silica fume)	2 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, respirable dust)	2 mg/m3 TWA LMPE-PPT; 10 mg/m3 TWA LMPE-PPT (inhalable particulate); 3 mg/m3 TWA LMPE-PPT (respirable particulate)	Not established
Quartz (14808-60-7)	TWAs	0.025 mg/m3 TWA (respirable fraction)	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 LMPE-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 LMPE -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
Hardener (Proprietary)	STELs	2 ppm STEL (see 29 CFR 1910.1048)	Not established
	TWAs	0.75 ppm TWA	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
Clay (Proprietary)	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
Glycol (Proprietary)	TWAs	Not established	10 mg/m3 TWA
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not established

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

Material Description			
Physical Form	Solid	Appearance/Description	Dark, granular, putty-like material.
Color	Dark	Odor	No data available
Particulate Size	600 µ	Odor Threshold	No data available
General Properties			
Boiling Point	No data available	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	Not relevant
Specific Gravity/Relative Density	2.7 to 2.9 Water=1	Water Solubility	Negligible < 0.1 %
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available	Volatiles (Vol.)	No data available
Flammability			

Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
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		
Silica, amorphous (0.03% TO 0.35%)	7631-86-9	Irritation: Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation; Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Resin (2% TO 5%)	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • >5 g/kg; Ingestion/Oral-Rat LD50 • >5 g/kg; Skin-Rat LD50 • >2 g/kg; Skin-Rat LD50 • >2 g/kg
Phenol (< 0.125%)	108-95-2	Acute Toxicity: Ingestion/Oral-Rat LD50 • 317 mg/kg; Inhalation-Rat LC50 • 316 mg/m ³ 4 Hour(s); Inhalation-Rat LC50 • 316 mg/m ³ 4 Hour(s); Skin-Rabbit LD50 • 630 mg/kg; Irritation: Eye-Rabbit • 5 mg • Severe irritation; Eye-Rabbit • 5 mg • Severe irritation; Skin-Rabbit • 535 mg-Open • Severe irritation; Skin-Rabbit • 535 mg-Open • Severe irritation; Mutagen: Micronucleus test • Ingestion/Oral-Mouse • 265 mg/kg; Micronucleus test • Ingestion/Oral-Mouse • 265 mg/kg; Reproductive: Ingestion/Oral-Rat TDLo • 300 mg/kg (6-15D preg); <i>Reproductive Effects:Effects on Fertility:Post-implantation mortality; Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus);</i> Ingestion/Oral-Rat TDLo • 300 mg/kg (6-15D preg); <i>Reproductive Effects:Effects on Fertility:Post-implantation mortality; Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus)</i>
Titanium dioxide (0.19% TO 1.161%)	13463-67-7	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Multi-dose Toxicity: Inhalation-Rat TCLo • 250 mg/m ³ 6 Hour(s) 4 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Chronic pulmonary edema; Lungs, Thorax, or Respiration:Other changes;</i> Inhalation-Rat TCLo • 250 mg/m ³ 6 Hour(s) 4 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Chronic pulmonary edema; Lungs, Thorax, or Respiration:Other changes</i>
		Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 370 g/kg 37 Day(s)-Intermittent; <i>Blood:Normocytic anemia;</i>

Clay (2.04% TO 6.16%)	Proprietary	<i>Blood:Other changes; Blood:Changes in erythrocyte (RBC) count; Ingestion/Oral-Rat TDLo • 370 g/kg 37 Day (s)-Intermittent; Blood:Normocytic anemia; Blood:Other changes; Blood:Changes in erythrocyte (RBC) count; Inhalation-Rat TClO • 30 mg/m³ 96 Week(s)-Intermittent; Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; Lungs, Thorax, or Respiration:Tumors; Inhalation-Rat TClO • 30 mg/m³ 96 Week(s)-Intermittent; Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; Lungs, Thorax, or Respiration:Tumors</i>
Antioxidant (1% TO 5%)	Proprietary	Acute Toxicity: Skin-Rabbit LD50 • >20 g/kg; Skin-Rabbit LD50 • >20 g/kg
Iron (0.2% TO 2.75%)	7439-89-6	Acute Toxicity: Ingestion/Oral-Rat LD50 • 30 g/kg; <i>Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain; Ingestion/Oral-Rat LD50 • 30 g/kg; Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain;</i> Multi-dose Toxicity: Inhalation-Rat TClO • 150 mg/m ³ 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; Inhalation-Rat TClO • 150 mg/m³ 4 Hour(s) 78 Week(s)-Intermittent; Lungs, Thorax, or Respiration:Other changes; Liver:Other changes; Nutritional and Gross Metabolic:Gross Metabolite Changes:Weight loss or decreased weight gain</i>
Silicon (0.5% TO 4%)	7440-21-3	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3160 mg/kg; Ingestion/Oral-Rat LD50 • 3160 mg/kg; Irritation: Eye-Rabbit • 3 mg • Mild irritation; Eye-Rabbit • 3 mg • Mild irritation
Glycol (2.9% TO 7%)	Proprietary	Acute Toxicity: Skin-Rabbit LD50 • 11890 mg/kg; Skin-Rabbit LD50 • 11890 mg/kg; Irritation: Skin-Rabbit • 500 mg • Mild irritation; Skin-Rabbit • 500 mg • Mild irritation
Ethylene glycol (0% TO 0.14%)	107-21-1	Acute Toxicity: Ingestion/Oral-Rat LD50 • 4700 mg/kg; Ingestion/Oral-Rat LD50 • 4700 mg/kg; Skin-Rabbit LD50 • 9530 µL/kg; Skin-Rabbit LD50 • 9530 µL/kg; Irritation: Eye-Rabbit • 1440 mg 6 Hour(s) • Moderate irritation; Eye-Rabbit • 1440 mg 6 Hour(s) • Moderate irritation; Skin-Rabbit • 555 mg-Open • Mild irritation; Skin-Rabbit • 555 mg-Open • Mild irritation; Reproductive: Inhalation-Rat TClO • 2500 mg/m ³ 6 Hour(s)(6-15D preg); <i>Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system; Reproductive Effects:Specific Developmental Abnormalities:Other developmental abnormalities; Inhalation-Rat TClO • 2500 mg/m³ 6 Hour(s)(6-15D preg); Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Specific Developmental Abnormalities:Musculoskeletal system; Reproductive Effects:Specific Developmental Abnormalities:Other developmental abnormalities</i>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Data lacking
Skin corrosion/Irritation	OSHA HCS 2012 • Data lacking
Serious eye damage/Irritation	OSHA HCS 2012 • Data lacking
Skin sensitization	OSHA HCS 2012 • Skin Sensitizer 1
Respiratory sensitization	OSHA HCS 2012 • Data lacking
Aspiration Hazard	OSHA HCS 2012 • Data lacking
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 • Data lacking
STOT-RE	OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1

Target Organs

- Lungs

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)

- Exposure to dust may cause mechanical 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	OSHA	IARC	NTP
Benzo(a)pyrene	50-32-8	Not Listed	Group 1-Carcinogenic	Reasonably Anticipated to be Human Carcinogen
Cristobalite	14464-46-1	Not Listed	Group 1-Carcinogenic	Not Listed
Hardener	Proprietary	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen
Titanium dioxide	13463-67-7	Not Listed	Group 2B-Possible Carcinogen	Not Listed
Quartz	14808-60-7	Not Listed	Group 1-Carcinogenic	Known Human Carcinogen

Reproductive Effects

- Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations

TC = Toxic Concentration

TD = Toxic Dose

LD = Lethal 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
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Benz(a)anthracene	56-55-3	Yes	Yes	Yes
Benzo(a)pyrene	50-32-8	Yes	Yes	Yes
Benzo(j)fluoranthene	205-82-3	Yes	Yes	Yes
Benzo(k)fluoranthene	207-08-9	Yes	Yes	Yes
Boric acid	10043-35-3	No	No	No
Wetting Agent	Proprietary	No	No	No
Coke Carbon	Proprietary	No	No	No
Cristobalite	14464-46-1	Yes	Yes	Yes
Dibenz(a,h)anthracene	53-70-3	Yes	Yes	Yes
Glycol	Proprietary	No	No	Yes
Ethylene glycol	107-21-1	Yes	Yes	Yes
Antioxidant	Proprietary	No	Yes	No
Hardener	Proprietary	Yes	Yes	Yes
Graphite	7782-42-5	Yes	Yes	Yes

Clay	<i>Proprietary</i>	Yes	Yes	Yes
Phenol	108-95-2	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Silicon	7440-21-3	Yes	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes	Yes

Inventory			
Component	CAS	Canada DSL	TSCA
Aluminum oxide	1344-28-1	Yes	Yes
Benz(a)anthracene	56-55-3	No	Yes
Benzo(a)pyrene	50-32-8	Yes	Yes
Benzo(j)fluoranthene	205-82-3	No	No
Benzo(k)fluoranthene	207-08-9	No	No
Boric acid	10043-35-3	Yes	Yes
Wetting Agent	<i>Proprietary</i>	Yes	Yes
Coke Carbon	<i>Proprietary</i>	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes
Dibenz(a,h)anthracene	53-70-3	No	Yes
Glycol	<i>Proprietary</i>	Yes	Yes
Ethylene glycol	107-21-1	Yes	Yes
Antioxidant	<i>Proprietary</i>	Yes	No
Hardener	<i>Proprietary</i>	Yes	Yes
Graphite	7782-42-5	Yes	Yes
Clay	<i>Proprietary</i>	Yes	Yes
Phenol	108-95-2	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Silicon	7440-21-3	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Benz(a)anthracene	56-55-3	D2A, D2B
• Antioxidant	<i>Proprietary</i>	B6, D1B (with >=30% but <90% Silicon)
• Benzo(a)pyrene	50-32-8	D2A
• Dibenz(a,h)anthracene	53-70-3	D2A, D2B
• Glycol	<i>Proprietary</i>	D1B
• Clay	<i>Proprietary</i>	D2A
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	A, B1, D1A, D2A, D2B; B3, D1A, D2A, D2B, E (regulated under Formol)
• Phenol	108-95-2	D1A, E D2A (In certain cases, this

• Titanium dioxide	13463-67-7	classification does not apply. For more information, consult the section Substance Specific Issues - Titanium dioxide, mixture containing on Health Canada's WHMIS Division website.)
• Ethylene glycol	107-21-1	D1B, D2A
• Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS classification criteria
• Silicon	7440-21-3	B4
• Cristobalite	14464-46-1	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.)
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	D2A
• Benzo(j)fluoranthene	205-82-3	D2A, D2B
• Quartz	14808-60-7	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.)
• Benzo(k)fluoranthene	207-08-9	D2A
• Graphite	7782-42-5	D2A (natural); D2B (synthetic)
Canada - WHMIS - Ingredient Disclosure List		
• Benz(a)anthracene	56-55-3	0.1 %
• Antioxidant	<i>Proprietary</i>	1 %
• Benzo(a)pyrene	50-32-8	0.1 %
• Dibenz(a,h)anthracene	53-70-3	0.1 %
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	1 %
• Hardener	<i>Proprietary</i>	0.1 %
• Phenol	108-95-2	1 %
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	1 %
• Aluminum oxide	1344-28-1	1 %
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	1 %
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	1 %
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	1 %
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Benz(a)anthracene	56-55-3	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Priority Substance List 2 (substance considered toxic)
• Phenol	108-95-2	Priority Substance List 2 (substance not considered toxic)
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Priority Substance List 2 (substance not considered toxic)
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

Canada - CEPA - Schedule I - List of Toxic Substances

• Benz(a)anthracene	56-55-3	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Benz(a)anthracene	56-55-3	Not Listed
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• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	1000 lb TQ
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Benz(a)anthracene	56-55-3	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	2 ppm STEL (See 29 CFR 1910.1048, 15 min); 0.5 ppm Action Level (See 29 CFR 1910.1048); 0.75 ppm TWA (See 29 CFR 1910.1048)
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

Environment

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

• Benz(a)anthracene	56-55-3	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed

• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	
• Phenol	108-95-2	
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	10 lb final RQ; 4.54 kg final RQ
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	1 lb final RQ; 0.454 kg final RQ
• Dibenz(a,h)anthracene	53-70-3	1 lb final RQ; 0.454 kg final RQ
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	100 lb final RQ; 45.4 kg final RQ
• Phenol	108-95-2	1000 lb final RQ; 454 kg final RQ
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	5000 lb final RQ; 2270 kg final RQ
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	5000 lb final RQ; 2270 kg final RQ
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	100 lb EPCRA RQ
• Phenol	108-95-2	1000 lb EPCRA RQ
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed

• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	Not Listed
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Not Listed
• Dibenz(a,h)anthracene	53-70-3	Not Listed
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	500 lb TPQ
• Phenol	108-95-2	500 lb lower TPQ; 10000 lb upper TPQ
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	0.1 % Supplier notification limit (listed under Chemical Category N590, Polycyclic aromatic compounds)
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	0.1 % Supplier notification limit (listed under Chemical Category N590, Polycyclic aromatic compounds)
• Dibenz(a,h)anthracene	53-70-3	0.1 % Supplier notification limit (listed under Chemical Category N590, Polycyclic aromatic compounds)
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	0.1 % de minimis concentration
• Phenol	108-95-2	1.0 % de minimis concentration
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	1.0 % de minimis concentration

• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	0.1 % Supplier notification limit (listed under Chemical Category N590, Polycyclic aromatic compounds)
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	0.1 % Supplier notification limit (listed under Chemical Category N590, Polycyclic aromatic compounds)
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	100 lb RT (listed under Polycyclic aromatic compounds)
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	100 lb RT (listed under Polycyclic aromatic compounds)
• Dibenz(a,h)anthracene	53-70-3	100 lb RT (listed under Polycyclic aromatic compounds)
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	100 lb RT (listed under Polycyclic aromatic compounds)
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	100 lb RT (listed under Polycyclic aromatic compounds)
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	
• Dibenz(a,h)anthracene	53-70-3	
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed

• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	Included in waste streams: F032, F034, F039, K001, K035, K141, K142, K143, K144, K145, K147, K148, K170
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	Included in waste streams: F032, F034, F037, F038, F039, K001, K035, K141, K142, K144, K145, K147, K148, K170
• Dibenz(a,h)anthracene	53-70-3	Included in waste streams: F032, F034, F039, K001, K035, K141, K142, K144, K145, K147, K148, K170
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Included in waste streams: K009, K010, K038, K040, K156, K157
• Phenol	108-95-2	Included in waste streams: F039, K001, K022, K087
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Included in waste streams: F034, F039, K141, K142, K143, K144, K147, K148, K170
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	waste number U018
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	waste number U022

• Dibenz(a,h)anthracene	53-70-3	waste number U063
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	waste number U122
• Phenol	108-95-2	waste number U188
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	hazardous constituent - no waste number
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	hazardous constituent - no waste number
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	
• Dibenz(a,h)anthracene	53-70-3	
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed
• Phenol	108-95-2	
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	0.059 mg/L (wastewater); 3.4 mg/kg (nonwastewater)
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	0.061 mg/L (wastewater); 3.4 mg/kg (nonwastewater)
• Dibenz(a,h)anthracene	53-70-3	0.055 mg/L (wastewater); 8.2 mg/kg (nonwastewater)
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed

• Phenol	108-95-2	0.039 mg/L (wastewater); 6.2 mg/kg (nonwastewater)
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	0.11 mg/L (wastewater); 6.8 mg/kg (nonwastewater)
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	
• Dibenz(a,h)anthracene	53-70-3	
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed
• Phenol	108-95-2	
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	waste number U018
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	waste number U022
• Dibenz(a,h)anthracene	53-70-3	waste number U063
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	waste number U122
• Phenol	108-95-2	waste number U188
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed

• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	Not Listed
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Waste Minimization Priority Chemicals		
• Benz(a)anthracene	56-55-3	(listed under Polycyclic aromatic compounds)
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	(listed under Polycyclic aromatic compounds)
• Dibenz(a,h)anthracene	53-70-3	(listed under Polycyclic aromatic compounds)
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	Not Listed
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	(listed under Polycyclic aromatic compounds)
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	(listed under Polycyclic aromatic compounds)
• Graphite	7782-42-5	Not Listed

United States - California

Environment

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

• Benz(a)anthracene	56-55-3	carcinogen, initial date 7/1/87
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	carcinogen, initial date 7/1/87
• Dibenz(a,h)anthracene	53-70-3	carcinogen, initial date 1/1/88
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	carcinogen, initial date 1/1/88 (gas)
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	carcinogen, initial date 9/2/11 (airborne, unbound particles of respirable size)
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed

• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	carcinogen, initial date 7/1/87
• Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)
• Benzo(k)fluoranthene	207-08-9	carcinogen, initial date 7/1/87
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	0.033 µg/day NSRL (oral)
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	0.06 µg/day NSRL
• Dibenz(a,h)anthracene	53-70-3	0.2 µg/day NSRL
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	40 µg/day NSRL (gas)
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	0.11 µg/day NSRL (oral)
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	Not Listed
• Graphite	7782-42-5	Not Listed

United States - Pennsylvania

Labor

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

• Benz(a)anthracene	56-55-3	
• Antioxidant	<i>Proprietary</i>	Not Listed
• Benzo(a)pyrene	50-32-8	
• Dibenz(a,h)anthracene	53-70-3	
• Glycol	<i>Proprietary</i>	Not Listed
• Clay	<i>Proprietary</i>	Not Listed
• Wetting Agent	<i>Proprietary</i>	Not Listed
• Hardener	<i>Proprietary</i>	
• Phenol	108-95-2	
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	
• Aluminum oxide	1344-28-1	
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	
• Graphite	7782-42-5	Not Listed

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

• Benz(a)anthracene	56-55-3	
• Antioxidant	Proprietary	Not Listed
• Benzo(a)pyrene	50-32-8	
• Dibenz(a,h)anthracene	53-70-3	
• Glycol	Proprietary	Not Listed
• Clay	Proprietary	Not Listed
• Wetting Agent	Proprietary	Not Listed
• Hardener	Proprietary	
• Phenol	108-95-2	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Ethylene glycol	107-21-1	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Silicon	7440-21-3	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Coke Carbon	Proprietary	Not Listed
• Boric acid	10043-35-3	Not Listed
• Benzo(j)fluoranthene	205-82-3	
• Quartz	14808-60-7	Not Listed
• Benzo(k)fluoranthene	207-08-9	
• Graphite	7782-42-5	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	<ul style="list-style-type: none"> • 26/April/2018
Last Revision Date	<ul style="list-style-type: none"> • 24/September/2015
Preparation Date	<ul style="list-style-type: none"> • 12/August/2015
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Key to abbreviations

NDA = No data available