

Safety Data Sheet

Firestone Building Products Company

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • Ceramic Coated Roofing Granules

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

Relevant identified use(s) • Roofing

1.3 Details of the supplier of the safety data sheet

Manufacturer • Firestone Building Products Company
200 4th Avenue S
Nashville, TN 37201-2208
United States

firestonemsds@bfdp.com

Telephone (General) • 800-428-4442

1.4 Emergency telephone number

Manufacturer • (800) 424-9300 - CHEMTREC

Manufacturer • (703) 527-3887 - CHEMTREC - International

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Carcinogenicity 1A - H350
Specific Target Organ Toxicity Repeated Exposure 2 - H373
Specific Target Organ Toxicity Repeated Exposure 1 - H372
Hazardous to the aquatic environment Chronic 3 - H412

DSD/DPD • Toxic (T)
Carcinogenic Substances - Category 1
R49, R48/20, R52, R53

2.2 Label Elements

CLP

DANGER

Hazard statements • H350 - May cause cancer.
H372 - Causes damage to organs - Lungs through prolonged or repeated exposure via Unreported Route
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements

- Prevention** • P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P260 - Do not breathe dust.
 P264 - Wash thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.
 P273 - Avoid release to the environment.
 P281 - Use personal protective equipment as required.
- Response** • P308+P313 - IF exposed or concerned: Get medical advice/attention.
 P314 - Get medical advice/attention if you feel unwell.
- Storage/Disposal** • P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD



- Risk phrases** • R49 - May cause cancer by inhalation.
 R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
 R52 - Harmful to aquatic organisms.
 R53 - May cause long-term adverse effects in the aquatic environment.
- Safety phrases** • S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S53 - Avoid exposure - obtain special instructions before use.

2.3 Other Hazards

- CLP** • According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.
- DSD/DPD** • According to European Directive 1999/45/EC this preparation is considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

- OSHA HCS 2012** • Carcinogenicity 1A
 Specific Target Organ Toxicity Repeated Exposure 1

2.2 Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • May cause cancer.
 Causes damage to organs - Lungs through prolonged or repeated exposure via inhalation

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.
 Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • 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.

2.3 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

2.1 Classification of the substance or mixture

WHMIS

- Other Toxic Effects - D2A

2.2 Label elements

WHMIS



WHMIS

- Other Toxic Effects - D2A

2.3 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

3.1 Substances

- Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Rhyolite	NDA	53% TO 68%	NDA	EU DSD/DPD: Data lacking EU CLP: Data lacking OSHA HCS 2012: Data lacking	NDA
Quartz	CAS:14808-60-7 EC Number:238-878-4	28% TO 44%	NDA	EU DSD/DPD: Self Classified: Carc. 1 R49; T, R48/20 EU CLP: Self Classified: Carc. 1A, H350; STOT RE 1, H372 OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs, Inhalation)	NDA
Ceramic	NDA	1% TO 5%	NDA	EU DSD/DPD: Data lacking EU CLP: Data lacking OSHA HCS 2012: Data lacking	NDA
Titanium dioxide	CAS:13463-67-7 EC Number:236-675-5	< 3%	NDA	EU DSD/DPD: Self Classified: Carc. 3, Xn, R40 EU CLP: Self Classified: Carc. 2, H351 OSHA HCS 2012: Carc. 2	NDA
Iron oxide	CAS:1309-37-1 EC Number:215	< 3%	NDA	EU DSD/DPD: Not classified EU CLP: Not classified	NDA

	-168-2			OSHA HCS 2012: Not classified	
Zinc oxide	CAS: 1314-13-2 EC Number: 215-222-5	< 2%	NDA	EU DSD/DPD: EU CLP, Annex VI, Table 3.2: N, R50, R53 EU CLP: Annex VI: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Eye Irrit. 2B	NDA
Distillates (petroleum), hydrotreated middle	CAS: 64742-46-7 EC Number: 265-148-2	< 1%	NDA	EU DSD/DPD: Self Classified: T; Carc. Cat. 2; R45 EU CLP: EU CLP, Annex VI, Table 3.1: Carc. 1B, H350 OSHA HCS 2012: Data lacking	NDA
Chromium(III) oxide	CAS: 1308-38-9 EC Number: 215-160-9	< 1%	NDA	EU DSD/DPD: Self Classified: Xn R48/20 EU CLP: Self Classified: STOT RE 1 (Lungs), H372 OSHA HCS 2012: STOT RE 1 (Lungs)	NDA
Carbon Black	CAS: 1333-86-4 EC Number: 215-609-9	< 1%	Ingestion/Oral-Rat LD50 • >15400 mg/kg Skin-Rabbit LD50 • >3 g/kg	EU DSD/DPD: Not Classified - Criteria not met EU CLP: Not Classified - Criteria not met OSHA HCS 2012: Carc. 2	NDA
Beta-(3,4-epoxycyclohexyl) ethyltriethoxysilane	CAS: 10217-34-2	< 0.1%	NDA	EU DSD/DPD: EU CLP, Annex VI, Table 3.2: R43; R52, R53 EU CLP: Annex VI: Skin Sens. 1, H317; Aquatic Chronic 3, H412 OSHA HCS 2012: Data lacking	NDA

Section 4 - First Aid Measures

4.1 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. If signs/symptoms continue, get medical attention.

Skin

- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. If irritation develops and persists, get medical attention.

Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion

- Drink 1 - 2 glasses of water. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 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 materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media

- LARGE FIRE: Water spray, fog or regular foam.
SMALL FIRES: Dry chemical, CO2, water spray or regular foam.

Unsuitable Extinguishing

- No data available.

Media

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Material is non-combustible and is not expected to pose a fire or explosion hazard.

Hazardous Combustion Products • None known.

5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions • Do not walk through spilled material. Avoid generating dust. Do not breathe dust. Wear appropriate personal protective equipment.

Emergency Procedures • In the event of a major spill, wet down material with water to prevent dusting, followed by scooping up product for disposal.

6.2 Environmental precautions

- Do not flush to sewer or allow to enter waterways.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures • Avoid generating dust. Wet down material with water prior to cleanup to control dust. SMALL DRY SPILLS: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. LARGE SPILLS: Cover powder spill with plastic sheet or tarp to minimize spreading. Flush spill area with water spray.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling • Do not use in areas without adequate ventilation. Minimize dust generation and accumulation. Wear appropriate personal protective equipment, avoid direct contact. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage • Ventilate enclosed areas. Keep container closed.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Belgium	Canada Alberta	Canada British Columbia	Canada Manitoba

Carbon Black (1333-86-4)	TWAs	3 mg/m3 TWA (inhalable fraction)	3.5 mg/m3 TWA	3.5 mg/m3 TWA	3 mg/m3 TWA (inhalable)	3 mg/m3 TWA (inhalable fraction)
Chromium(III) oxide	TWAs	0.5 mg/m3 TWA (as Cr) <i>as Chromium (III) inorganic compounds</i>	Not established	0.5 mg/m3 TWA (as Cr) <i>as Chromium(III) compounds</i>	0.5 mg/m3 TWA (as Cr) <i>as Chromium (III) inorganic compounds</i>	0.5 mg/m3 TWA (as Cr) <i>as Chromium (III) inorganic compounds</i>
Zinc oxide (1314-13-2)	STELs	10 mg/m3 STEL (respirable fraction)	10 mg/m3 STEL (fume)	10 mg/m3 STEL (respirable)	10 mg/m3 STEL (respirable)	10 mg/m3 STEL (respirable fraction)
	TWAs	2 mg/m3 TWA (respirable fraction)	10 mg/m3 TWA (dust); 5 mg/m3 TWA (fume)	2 mg/m3 TWA (respirable)	2 mg/m3 TWA (respirable)	2 mg/m3 TWA (respirable fraction)
Iron oxide (1309-37-1)	TWAs	5 mg/m3 TWA (respirable fraction)	2 ppm TWA (as Fe, fume); 5 mg/m3 TWA (as Fe, fume)	5 mg/m3 TWA (respirable)	10 mg/m3 TWA (total particulate matter containing no Asbestos and <1% Crystalline silica, total particulate, listed under Rouge); 3 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, respirable particulate, listed under Rouge); 5 mg/m3 TWA (dust and fume, as Fe)	5 mg/m3 TWA (respirable fraction)
	STELs	Not established	Not established	Not established	10 mg/m3 STEL (fume, as Fe)	Not established
Titanium dioxide (13463-67-7)	TWAs	10 mg/m3 TWA	10 mg/m3 TWA	10 mg/m3 TWA	10 mg/m3 TWA (total dust); 3 mg/m3 TWA (respirable fraction)	10 mg/m3 TWA
Quartz (14808-60-7)	TWAs	0.025 mg/m3 TWA (respirable fraction)	0.1 mg/m3 TWA (alveolar dust)	0.025 mg/m3 TWA (respirable particulate)	0.025 mg/m3 TWA (respirable)	0.025 mg/m3 TWA (respirable fraction)

Exposure Limits/Guidelines (Con't.)

	Result	Canada New Brunswick	Canada Northwest Territories	Canada Nova Scotia	Canada Nunavut	Canada Ontario
Carbon Black (1333-86-4)	TWAs	3.5 mg/m3 TWA	3.5 mg/m3 TWA	3 mg/m3 TWA (inhalable fraction)	3.5 mg/m3 TWA	3.5 mg/m3 TWA
	STELs	Not established	7 mg/m3 STEL	Not established	7 mg/m3 STEL	Not established
Chromium(III) oxide	TWAs	0.5 mg/m3 TWA (as Cr) <i>as Chromium(III) compounds</i>	0.5 mg/m3 TWA (as Cr) <i>as Chromium(III) compounds</i>	0.5 mg/m3 TWA (as Cr) <i>as Chromium (III) inorganic compounds</i>	0.5 mg/m3 TWA (as Cr) <i>as Chromium(III) compounds</i>	0.5 mg/m3 TWA (as Cr, listed under Chromium and inorganic compounds) <i>as Chromium(III) compounds</i>
	STELs	Not established	1.5 mg/m3 STEL (as Cr) <i>as Chromium(III) compounds</i>	Not established	1.5 mg/m3 STEL (as Cr) <i>as Chromium(III) compounds</i>	Not established

Zinc oxide (1314-13-2)	STELs	10 mg/m3 STEL (fume)	10 mg/m3 STEL (fume)	10 mg/m3 STEL (respirable fraction)	10 mg/m3 STEL (fume)	10 mg/m3 STEL (respirable)
	TWAs	10 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, dust); 5 mg/m3 TWA (fume)	5 mg/m3 TWA (fume); 5 mg/m3 TWA (dust, respirable mass); 10 mg/m3 TWA (total mass, dust)	2 mg/m3 TWA (respirable fraction)	5 mg/m3 TWA (fume); 5 mg/m3 TWA (dust, respirable mass); 10 mg/m3 TWA (total mass, dust)	2 mg/m3 TWA (respirable)
Iron oxide (1309-37-1)	TWAs	5 mg/m3 TWA (particulate matter containing no Asbestos and <1% Crystalline silica, dust and fume, as Fe); 10 mg/m3 TWA (regulated under Rouge, particulate matter containing no Asbestos and <1% Crystalline silica)	5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)	5 mg/m3 TWA (respirable fraction)	5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)	5 mg/m3 TWA (respirable)
Titanium dioxide (13463-67-7)	TWAs	10 mg/m3 TWA	5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)	10 mg/m3 TWA	5 mg/m3 TWA (respirable mass); 10 mg/m3 TWA (total mass)	10 mg/m3 TWA (total dust)
Quartz (14808-60-7)	TWAs	0.1 mg/m3 TWA (respirable fraction)	0.1 mg/m3 TWA (respirable mass); 0.3 mg/m3 TWA (total mass)	0.025 mg/m3 TWA (respirable fraction)	0.1 mg/m3 TWA (respirable mass); 0.3 mg/m3 TWA (total mass)	0.10 mg/m3 TWA (designated substance regulation, respirable)

Exposure Limits/Guidelines (Con't.)

	Result	Canada Quebec	Canada Saskatchewan	Canada Yukon	Denmark	Germany DFG
Carbon Black (1333-86-4)	TWAs	3.5 mg/m3 TWAEV	3.5 mg/m3 TWA	3.5 mg/m3 TWA	3.5 mg/m3 TWA	Not established
	STELs	Not established	Not established	7 mg/m3 STEL	Not established	Not established
Chromium(III) oxide	TWAs	0.5 mg/m3 TWAEV (as Cr) <i>as Chromium(III) compounds</i>	0.5 mg/m3 TWA (as Cr) <i>as Chromium(III) compounds</i>	Not established	Not established	Not established
Zinc oxide (1314-13-2)	TWAs	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust); 5 mg/m3 TWAEV (fume)	2 mg/m3 TWA (dust and fume, respirable fraction)	5 mg/m3 TWA (fume); 30 mppcf TWA (dust); 10 mg/m3 TWA (dust)	4 mg/m3 TWA (including vapour, as Zn)	Not established
	STELs	10 mg/m3 STEV (fume)	Not established	10 mg/m3 STEL (fume); 20 mg/m3 STEL (dust)	Not established	Not established
	Ceilings	Not established	Not established	Not established	Not established	1 mg/m3 Peak (respirable fraction, fume)
	MAKs	Not established	Not established	Not established	Not established	1 mg/m3 TWA MAK (fume, respirable fraction)
		5 mg/m3 TWAEV				

Iron oxide (1309-37-1)	TWAs	(dust and fume, as Fe); 10 mg/m ³ TWAEV (containing no Asbestos and <1% Crystalline silica, regulated under Rouge, total dust)	5 mg/m ³ TWA (dust and fume, as Fe); 10 mg/m ³ TWA (regulated under Rouge)	5 mg/m ³ TWA (fume, as Fe ₂ O ₃); 30 mppcf TWA (regulated under Rouge); 10 mg/m ³ TWA (regulated under Rouge)	3.5 mg/m ³ TWA (as Fe)	Not established
	STELs	Not established	Not established	10 mg/m ³ STEL (fume); 20 mg/m ³ STEL (regulated under Rouge)	Not established	Not established
Titanium dioxide (13463-67-7)	TWAs	10 mg/m ³ TWAEV (containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m ³ TWA	30 mppcf TWA (as Ti); 10 mg/m ³ TWA (as Ti)	6 mg/m ³ TWA (as Ti)	Not established
	STELs	Not established	Not established	20 mg/m ³ STEL (as Ti)	Not established	Not established
Quartz (14808-60-7)	TWAs	0.1 mg/m ³ TWAEV (respirable dust)	0.05 mg/m ³ TWA (respirable fraction, listed under Silica - crystalline)	300 particle/mL TWA (listed under Silica)	0.3 mg/m ³ TWA (total); 0.1 mg/m ³ TWA (respirable)	Not established

Exposure Limits/Guidelines (Con't.)

	Result	Germany TRGS	NIOSH	OSHA
Carbon Black (1333-86-4)	TWAs	Not established	3.5 mg/m ³ TWA; 0.1 mg/m ³ TWA (Carbon black in presence of Polycyclic aromatic hydrocarbons, as PAH)	3.5 mg/m ³ TWA
Chromium(III) oxide	TWAs	2 mg/m ³ TWA AGW (inhalable fraction, exposure factor 1, listed under Chromium) <i>as Chromium (III) inorganic compounds</i>	0.5 mg/m ³ TWA (as Cr) <i>as Chromium(III) compounds</i>	0.5 mg/m ³ TWA (as Cr) <i>as Chromium(III) compounds</i>
Zinc oxide (1314-13-2)	TWAs	Not established	5 mg/m ³ TWA (dust and fume)	5 mg/m ³ TWA (fume); 15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
	Ceilings	Not established	15 mg/m ³ Ceiling (dust)	Not established
	STELs	Not established	10 mg/m ³ STEL (fume)	Not established
Iron oxide (1309-37-1)	TWAs	Not established	5 mg/m ³ TWA (dust and fume, as Fe)	10 mg/m ³ TWA (fume)
Titanium dioxide (13463-67-7)	TWAs	Not established	Not established	15 mg/m ³ TWA (total dust)
Quartz (14808-60-7)	TWAs	Not established	0.05 mg/m ³ TWA (respirable dust)	Not established

Exposure Control Notations

Germany DFG

- Quartz (14808-60-7): **Carcinogens:** (Category 1 (causes cancer in man, alveola fraction))
- Chromium(III) oxide as Chromium(III) compounds: **Sensitizers:** (skin sensitizer)
- Iron oxide (1309-37-1): **Carcinogens:** (Category 3B (could be carcinogenic for man, with the exception of non-bioavailable ferrous oxides))
- Titanium dioxide (13463-67-7): **Carcinogens:** (Category 3A (could be carcinogenic for man, inhalable fraction with the exception of ultra small particles))

- Carbon Black (1333-86-4): **Carcinogens:** (Category 3B (could be carcinogenic for man, inhalable fraction))

8.2 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

- Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Eye/Face

- Wear safety goggles.

Skin/Body

- Wear appropriate gloves.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

OSHA = Occupational Safety and Health Administration

NIOSH = National Institute of Occupational Safety and Health

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

TWAEV = Time-Weighted Average Exposure Value

ACGIH = American Conference of Governmental Industrial Hygiene

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

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	White, black or buff colored granules with no odor.
Color	Black White Buff .	Odor	Odorless
Particulate Type	Dust	Odor Threshold	Data lacking
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	> 2300 °F(> 1260 °C)
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 2.6 Water=1	Water Solubility	Insoluble
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization not indicated.

10.4 Conditions to avoid

- No data available

10.5 Incompatible materials

- No data available.

10.6 Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

		Components
Quartz (28% TO 44%)	14808-60-7	Tumorigen / Carcinogen: Inhalation-Rat TCl ₀ • 50 mg/m ³ 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Liver:Tumors</i>
Chromium(III) oxide (< 1%)	1308-38-9	Acute Toxicity: Ingestion/Oral-Mammal LD50 • 621 mg/kg
Zinc oxide (< 2%)	1314-13-2	Irritation: Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Reproductive: Ingestion/Oral-Rat TDLo • 6846 mg/kg (1-22D preg); <i>Reproductive Effects:Specific Developmental Abnormalities:Homeostasis; Reproductive Effects:Effects on Newborn:Stillbirth; Reproductive Effects:Effects on Newborn:Growth statistics (e.g., reduced weight gain)</i>
Titanium dioxide (< 3%)	13463-67-7	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Tumorigen / Carcinogen: Inhalation-Rat TCl ₀ • 250 mg/m ³ 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i>
Carbon Black (< 1%)	1333-86-4	Acute Toxicity: Ingestion/Oral-Rat LD50 • >15400 mg/kg; <i>Behavioral:Somnolence (general depressed activity);</i> Tumorigen / Carcinogen: Inhalation-Rat TCl ₀ • 11600 µg/m ³ 18 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i>

GHS Properties	Classification
Acute toxicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met

Aspiration Hazard	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	EU/CLP • Carcinogenicity 1A OSHA HCS 2012 • Carcinogenicity 1A
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-SE	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-RE	EU/CLP • Specific Target Organ Toxicity Repeated Exposure 1; Specific Target Organ Toxicity Repeated Exposure 2 OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1

Route(s) of entry/exposure • Inhalation, Skin, Eye, Ingestion

Medical Conditions Aggravated by Exposure • Disorders of the lungs.

Potential Health Effects

Inhalation

Acute (Immediate)

- Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.

Chronic (Delayed)

- Chronic overexposure to dust containing respirable sized crystalline silica can causedelayed lung injury (silicosis). Inhalation of dust containing crystalline silica pulmonarydiseases such as asthma and lung disorder associated with smoking.

Skin

Acute (Immediate)

- 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.

Carcinogenic Effects

- May cause cancer.

Carcinogenic Effects			
	CAS	IARC	NTP
Carbon Black	1333-86-4	Group 2B-Possible Carcinogen	Not Listed
Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen
Titanium dioxide	13463-67-7	Group 2B-Possible Carcinogen	Evidence of Carcinogenicity

Key to abbreviations

LD = Lethal Dose

MLD = Mild

TC = Toxic Concentration

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Ceramic Coated Roofing Granules	NDA	Aquatic Toxicity-Crustacea: 48 Hour(s) EC50 <i>Daphnia Magna</i> 1 mg/L Comments: Data for Zinc Oxide 48 Hour(s) NOEC <i>Daphnia Magna</i> 0.04 mg/L Comments: Data for Zinc Oxide

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- Harmful to aquatic life with long lasting effects.

Section 13 - Disposal Considerations

13.1 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

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not regulated	NDA	NDA	NDA
ADN	NDA	Not regulated	NDA	NDA	NDA
ADR/RID	NDA	Not regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

14.6 Special precautions for user

- None known.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

- Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Chronic

State Right To Know				
Component	CAS	MA	NJ	PA
Beta-(3,4-epoxycyclohexyl) ethyltriethoxysilane	10217-34-2	No	No	No
Carbon Black	1333-86-4	Yes	Yes	Yes
Chromium(III) oxide	1308-38-9	Yes	Yes	No
Distillates (petroleum), hydrotreated middle	64742-46-7	No	No	No
Iron oxide	1309-37-1	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Beta-(3,4-epoxycyclohexyl) ethyltriethoxysilane	10217-34-2	No	Yes	No	No	Yes
Carbon Black	1333-86-4	Yes	No	Yes	Yes	Yes
Chromium(III) oxide	1308-38-9	Yes	No	Yes	No	Yes
Distillates (petroleum), hydrotreated middle	64742-46-7	Yes	No	Yes	No	Yes
Iron oxide	1309-37-1	Yes	No	Yes	No	Yes
Quartz	14808-60-7	Yes	No	Yes	No	Yes
Titanium dioxide	13463-67-7	Yes	No	Yes	No	Yes
Zinc oxide	1314-13-2	Yes	No	Yes	No	Yes

Belgium

Labor

Belgium - Substances and Preparations - Carcinogens and Mutagens

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Bulgaria

Environment

Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - 24 Hour

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - 30 Minute

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - Annual

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Carbon Black	1333-86-4	D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Carbon Black, non-respirable on Health Canada's WHMIS Division website.)
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• Iron oxide	1309-37-1	Uncontrolled product according to WHMIS classification criteria
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	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.)
• Zinc oxide	1314-13-2	Uncontrolled product according to WHMIS classification criteria
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Uncontrolled product according to WHMIS classification criteria
• Chromium(III) oxide	1308-38-9	Uncontrolled product according to WHMIS classification criteria
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• 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.)
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
Canada - WHMIS - Ingredient Disclosure List		
• Carbon Black	1333-86-4	1 %
• Iron oxide	1309-37-1	1 %
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	1 %
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	1 %
• Chromium(III) oxide as Chromium(III) compounds		1 %
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	1 %
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed

• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Denmark

Environment

Denmark - List of Undesirable Substances - Product Groups/Function

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Europe

Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	N; R50-53
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Carc.Cat.2; R45
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	R43 R52-53

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	N R:50/53 S:60-61
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	T R:45 S:53-45
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Xi R:43-52/53 S:(2)-24-37-61

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	N
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	S:60-61
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	S:53-45
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	S:(2)-24-37-61

Germany**Labor****Germany - Immission Control - Qualifying Quantities for Major Accident Prevention**

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed

• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - Immission Control - Qualifying Quantities for Safety Reporting

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TRGS 505 - Specific Lead Regulations

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TRGS 511 - Specific Ammonium Nitrate Regulations

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Environment**Germany - TA Luft - Types and Classes**

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed

• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TA Luft - Emission Limits for Carcinogenic Substances

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TA Luft - Emission Limits for Fibers

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TA Luft - Emission Limits for Inorganic Dusts

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TA Luft - Emission Limits for Inorganic Gases

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed

• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - TA Luft - Emission Limits for Organic Substances

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - Water Classification (VwVwS) - Annex 1

• Carbon Black	1333-86-4	ID Number 1742, not considered hazardous to water
• Iron oxide	1309-37-1	ID Number 800, not considered hazardous to water
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	ID Number 1345, not considered hazardous to water
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	ID Number 806, not considered hazardous to water
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	ID Number 849, not considered hazardous to water
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	ID Number 5350, hazard class 1 - low hazard to waters
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed

• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
Germany - Water Classification (VwVwS) - Annex 3		
• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	ID Number 2187, hazard class 2 - hazard to waters
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	ID Number 849, not considered hazardous to water
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

United States

Labor

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

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

Environment

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

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed

• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

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

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

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

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

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

• Carbon Black	1333-86-4	Not Listed
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• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		1.0 % de minimis concentration (Chemical Category N982)
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		1.0 % de minimis concentration (except for Chromite ore mined in the Transvaal Region of South Africa and the unreacted ore component of the Chromite ore processing residue (COPR), Chemical Category N090)
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

United States - California

Environment

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

• Carbon Black	1333-86-4	carcinogen, initial date 2/21/03 (airborne, unbound particles of respirable size)
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• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	carcinogen, initial date 9/2/11 (airborne, unbound particles of respirable size)
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed

• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

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

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	(fume)
• Zinc oxide as Zinc compounds		
• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

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

• Carbon Black	1333-86-4	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Iron oxide as Iron compounds		Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Zinc oxide	1314-13-2	Not Listed
• Zinc oxide as Zinc compounds		Not Listed

• Distillates (petroleum), hydrotreated middle	64742-46-7	Not Listed
• Chromium(III) oxide	1308-38-9	Not Listed
• Chromium(III) oxide as Chromium(III) compounds		Not Listed
• Chromium(III) oxide as Chromium (III) inorganic compounds		Not Listed
• Quartz	14808-60-7	Not Listed
• Beta-(3,4-epoxycyclohexyl)ethyltriethoxysilane	10217-34-2	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 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"> • 24/January/2018
Preparation Date	<ul style="list-style-type: none"> • 04/January/2012
Other Information	<ul style="list-style-type: none"> • Changes to this revision: Updated mailing address.
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Key to abbreviations

NDA = No data available