1. Product and company identification

Product identifier

Trade name: Organic Bonded Abrasives, Type II

This safety data sheet pertains to the following products:
Mounted Points, resin bond
Cones and plugs, resin bond, aluminum oxide
Reinforced Cut-off Wheels (all types/shapes)
Reinforced Grinding Wheels (all types/shapes)
Snagging Wheels
Cup Wheels

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

General use: Grinding and sanding of different kinds of materials.
For industrial purposes only

Details of the supplier of the safety data sheet

Company name:

PFERD INC.
Street/POB-No.: 9201 W. Heather Ave.
Postal Code, city: Milwaukee, WI 53224, USA
WWW: www.pferdusa.com
E-mail: sales@pferdusa.com
Telephone: 1-800-342-9015
Telefax: 262-255-2840
Department responsible for information: 1-800-342-9015

PFERD CANADA INC.
Street/POB-No.: 5570 McAdam Road
Postal Code, city: Mississauga, Ontario L4Z 1P1, Canada
WWW: www.pferdusa.com
E-mail: sales@pferdcanada.ca
Telephone: (905) 501-1555
Telefax: (905) 501-1554
Department responsible for information: 1-866-245-1555

Emergency phone number

USA/Canada: 1-800-255-3924

2. Hazards identification

Emergency overview

Appearance: Physical state at 68 °F (20 °C) and 101.3 kPa: solid
Color: varying colors

Odor: No data available

Classification: Skin Irritation - Category 2; Eye Damage - Category 1; Carcinogenicity - Category 1A; Toxic to Reproduction (Lactation); Specific Target Organ Toxicity (Repeated Exposure) - Category 1; Aquatic toxicity - chronic - Category 3;

Hazard symbols:

Signal word: **Danger**

Hazard statements:

Causes skin irritation.
Causes serious eye damage.
May cause cancer.
May cause harm to breast-fed children.
Causes damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Precautionary statements:

Obtain special instructions before use.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid contact during pregnancy/while nursing.
Wash hands and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with plenty of water/soap.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific treatment (see ' First aid ' on this label).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point.

Additional information

The hazard identification is based on a formalistic procedure as the hazard statements of the ingredients are summarized under section 3. This does not correspond to the hazardousness of the product itself. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being ground. Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated. This dust may present a fire or dust explosion hazard and may present a serious health hazard.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and WHMIS in Canada.

Hazards not otherwise classified

Mechanical processing can produce particles and dust.
Inhalation of dust may cause irritation of the respiratory system.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: Mounted points, grinding-, cut-off-, and cup-wheels.

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 1344-28-1	Aluminium oxide	< 95 %	not classified
CAS 409-21-2	Silicon carbide	< 95 %	not classified
CAS -	Synthetic resin, polymerized	< 30 %	not classified
CAS 1314-23-4	Zirconium dioxide	< 25 %	not classified
CAS 1309-36-0	Iron disulfide (pyrite)	< 20 %	not classified
CAS -	Reaction mass of potassium aluminium tetrafluoride and tripotassium hexafluoroaluminate	< 20 %	Acute Toxicity - inhalative - Category 4. Eye Irritation - Category 2A. Toxic to Reproduction (Lactation). Specific Target Organ Toxicity (Repeated Exposure) - Category 1. Aquatic toxicity - chronic - Category 3.
CAS 13775-52-5	Tripotassium hexafluoroaluminate	< 20 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 13775-53-6	Trisodium hexafluoroaluminate (cryolite)	< 15 %	Acute Toxicity - inhalative - Category 4. Toxic to Reproduction (Lactation). Specific Target Organ Toxicity (Repeated Exposure) - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 65997-17-3	Fibre glass weaves	< 15 %	not classified
CAS 1308-56-1	Copper iron disulphide	< 10 %	not classified
CAS 1314-98-3	Zinc sulphide	< 10 %	not classified
CAS 471-34-1	Calcium carbonate	< 8 %	not classified
CAS 7773-01-5	Manganese dichloride	< 7 %	Acute Toxicity - oral - Category 4. Eye Damage - Category 1. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - chronic - Category 2.
CAS 13463-67-7	Titanium dioxide	< 5 %	Carcinogenicity - Category 2.
CAS 1309-37-1	Diiron trioxide	< 5 %	not classified
CAS 9002-88-4	Polyethylene	< 5 %	not classified
CAS 7789-75-5	Calcium fluoride	< 4 %	not classified
CAS 598-62-9	Manganese carbonate	< 4 %	not classified
CAS -	Fleece	< 3 %	not classified
CAS -	Paper	< 2 %	not classified
CAS 7782-42-5	Graphite	< 2 %	not classified
CAS 1308-38-9	Chromium (III) oxide	< 2 %	not classified
CAS 1312-81-8	Lanthanum oxide	< 1 %	not classified
CAS 7631-86-9	Silicon dioxide	< 1 %	not classified
CAS 1309-48-4	Magnesium oxide	< 0.5 %	not classified

CAS No.	Designation	Concentration	Classification
CAS 1314-36-9	Yttrium oxide	< 0.5 %	not classified
CAS 1305-78-8	Calcium oxide	< 0.5 %	Skin Irritation - Category 2. Eye Damage - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 14808-60-7	Quartz (SiO2)	< 0.5 %	Carcinogenicity - Category 1A.
CAS 12055-23-1	Hafnium dioxide	< 0.4 %	not classified
CAS 50-00-0	Formaldehyde	< 0.1 %	Acute Toxicity - oral - Category 3. Acute Toxicity - dermal - Category 3. Acute Toxicity - inhalative - Category 3. Skin Corrosion - Category 1B. Sensitization - skin - Category 1. Germ cell mutagenicity - Category 2. Carcinogenicity - Category 1B.

Additional information: The ingredients are embedded in the product. The components listed above do not represent/include the chemical composition of the Hub.

4. First aid measures

General information: Take off contaminated clothing and wash it before reuse.

In case of inhalation: Provide fresh air. If you feel unwell, seek medical advice.

Following skin contact: Remove residues with soap and water. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

After swallowing: Rinse mouth with water. Give water to drink in small sips. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice.

Most important symptoms/effects, acute and delayed

Can be irritating because of mechanical abrasion. Causes skin irritation. Causes serious eye damage. Causes damage to organs through prolonged or repeated exposure.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:
Not applicable

Auto-ignition temperature: No data available

Suitable extinguishing media:
Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

Specific hazards arising from the chemical

At temperatures above 482 °F (250 °C) hazardous decomposition products may be generated.

Protective equipment and precautions for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information: Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions: Avoid generation of dust. Do not inhale substance.
In case of heating: development of gas/vapor possible.
Provide adequate ventilation. Wear appropriate protective equipment.
Avoid contact with the substance. Keep unprotected people away. Avoid exposure. Take off contaminated clothing and wash it before reuse.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains.
In case of release, notify competent authorities.

Methods for clean-up: Take up mechanically, placing in appropriate containers for disposal.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Avoid generation of dust.
In case of heating: development of gas/vapor possible.
Do not inhale substance. Wear appropriate protective equipment. Avoid contact with the substance.
Obtain special instructions before use. The product is to be handled with extreme caution.
Take off contaminated clothing and wash it before reuse. Work place should be equipped with a shower and an eye rinsing apparatus.

Storage

Requirements for storerooms and containers:

Keep container tightly closed and dry.
Keep in a cool, well-ventilated place.
Keep only in the original container. Keep away from air. Protect from moisture.
Only trained personnel may be allowed to enter storage area.

Hints on joint storage: Do not store together with oxidizing agents or acids.
Do not store together with food.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
1344-28-1	Aluminium oxide	Canada, Alberta: OEL 8 hour	10 mg/m³
		Canada, Québec: VEMP	10 mg/m³ (inhalable fraction)
		USA: OSHA: TWA	15 mg/m³ (inhalable fraction)
		USA: OSHA: TWA	5 mg/m³ (respirable fraction)
409-21-2	Silicon carbide	Canada, Alberta: OEL 8 hour	0.1 fibers/cm³ (fibers, inhalable fraction)
		Canada, Alberta: OEL 8 hour	10 mg/m³ (Contains no fibers, inhalable fraction)
		Canada, Alberta: OEL 8 hour	3 mg/m³ (Contains no fibers, respirable fraction)
		Canada, BC: OEL TWA	0.1 fibers/cm³ (fibers, inhalable fraction)
		Canada, BC: OEL TWA	10 mg/m³ (Contains no fibers, inhalable fraction)
		Canada, BC: OEL TWA	3 mg/m³ (Contains no fibers, respirable fraction)
		Canada, Ontario: OEL TWA	0.1 fibers/cm³ (inhalable fraction)
		Canada, Ontario: OEL TWA	10 mg/m³ (Contains no fibers, inhalable fraction)
		Canada, Ontario: OEL TWA	3 mg/m³ (Contains no fibers, respirable fraction)
		Canada, Québec: VEMP	10 mg/m³ (Contains no fibers, inhalable fraction)
		USA: ACGIH: TWA	0.1 fibers/cm³ (fibers, inhalable fraction)
		USA: ACGIH: TWA	10 mg/m³ (inhalable fraction)
		USA: ACGIH: TWA	3 mg/m³ (respirable fraction)
		USA: NIOSH: TWA	10 mg/m³ (inhalable fraction)
		USA: NIOSH: TWA	5 mg/m³ (respirable fraction)
		USA: OSHA: TWA	15 mg/m³ (inhalable fraction)
		USA: OSHA: TWA	5 mg/m³ (respirable fraction)

CAS No.	Designation	Type	Limit value
1314-23-4	Zirconium dioxide	Canada, Alberta: OEL 15 min	10 mg/m³
		Canada, Alberta: OEL 8 hour	5 mg/m³
		Canada, BC: OEL STEL	10 mg/m³
		Canada, BC: OEL TWA	5 mg/m³
		Canada, Québec: VECD	10 mg/m³ (Zirconium and compounds, calculated as Zr)
		Canada, Québec: VEMP	5 mg/m³ (Zirconium and compounds, calculated as Zr)
		USA: ACGIH: STEL	10 mg/m³ (calculated as Zr)
		USA: ACGIH: TWA	5 mg/m³ (calculated as Zr)
		USA: IDLH: TWA	25 Zr/m3
		USA: NIOSH: STEL	10 mg/m³ (calculated as Zr)
		USA: NIOSH: TWA	5 mg/m³ (calculated as Zr)
		USA: OSHA: TWA	5 mg/m³ (calculated as Zr)
-	Reaction mass of potassium aluminium tetrafluoride and tripotassium hexafluoroaluminate	Canada, Alberta: OEL 8 hour	2.5 mg/m³ (calculated as F)
		Canada, BC: OEL TWA	2.5 mg/m³ (calculated as F)
		Canada, Québec: VEMP	2.5 mg/m³ (calculated as F)
		USA: ACGIH: TWA	2.5 mg/m³ (Fluorides, calculated as F)
		USA: IDLH: TWA	250 F/m3
		USA: NIOSH: TWA	2.5 mg/m³ (calculated as F)
		USA: OSHA: TWA	2.5 mg/m³ (calculated as F)
13775-53-6	Trisodium hexafluoroaluminate (cryolite)	Canada, Alberta: OEL 8 hour	2.5 mg/m³ (calculated as F)
		Canada, BC: OEL TWA	2.5 mg/m³ (calculated as F)
		Canada, Québec: VEMP	2.5 mg/m³ (calculated as F)
		USA: ACGIH: TWA	2.5 mg/m³ (Fluorides, calculated as F)
		USA: IDLH: TWA	250 F/m3
		USA: NIOSH: TWA	2.5 mg/m³ (calculated as F)
		USA: OSHA: TWA	2.5 mg/m³ (calculated as F)

CAS No.	Designation	Type	Limit value
65997-17-3	Fibre glass weaves	Canada, Alberta: OEL 8 hour	1 fibers/cm³ (Glass Fibres, Continuous filament)
		Canada, Alberta: OEL 8 hour	5 mg/m³ (Glass Fibres, continuous filament, glass wool, inhalable fraction)
		Canada, BC: OEL TWA	1 fibers/cm³ (Synthetic vitreous fibres, Continuous filament glass fibres)
		Canada, BC: OEL TWA	5 mg/m³ (Synthetic vitreous fibres, Continuous filament glass fibres, inhalable fraction)
		Canada, Ontario: OEL TWA	1 fibers/cm³ (Synthetic vitreous fibres, Continuous filament glass fibres)
		Canada, Ontario: OEL TWA	5 mg/m³ (Synthetic Vitreous Fibres (Man Made Mineral Fibres), Continuous filament glass fibres)
		Canada, Québec: VEMP	10 mg/m³ Fibre de verre en filament continu; Pt note 1
		USA: ACGIH: TWA	1 fibers/cm³ (Synthetic vitreous fibres, Continuous filament glass fibres)
		USA: ACGIH: TWA	5 mg/m³ (Synthetic vitreous fibres, Continuous filament glass fibres, inhalable fraction)
		USA: NIOSH: TWA	3 fibers/cm³ Fibers less than or equal to 3,5 µm in diameter and greater than or equal to 10µm in length.
		USA: NIOSH: TWA	5 mg/m³ (Fiber glas®, Fiberglass, Glass fibers, Glass wool, total dust)
471-34-1	Calcium carbonate	Canada, Alberta: OEL 8 hour	10 mg/m³
		Canada, Québec: VEMP	10 mg/m³ (inhalable fraction)
		USA: NIOSH: TWA	10 mg/m³ (inhalable fraction)
		USA: NIOSH: TWA	5 mg/m³ (respirable fraction)
		USA: OSHA: TWA	15 mg/m³ (inhalable fraction)
		USA: OSHA: TWA	5 mg/m³ (respirable fraction)

CAS No.	Designation	Type	Limit value
13463-67-7	Titanium dioxide	Canada, Alberta: OEL 8 hour	10 mg/m³
		Canada, BC: OEL TWA	10 mg/m³ (inhalable fraction)
		Canada, BC: OEL TWA	3 mg/m³ (respirable fraction)
		Canada, Québec: VEMP	10 mg/m³ (inhalable fraction)
		USA: ACGIH: TWA	0.2 mg/m³ (nanoscale particles; respirable fraction)
		USA: ACGIH: TWA	2.5 mg/m³ (finescale particles; respirable fraction)
		USA: IDLH: TWA	5000 mg/m³
		USA: OSHA: TWA	15 mg/m³
1309-37-1	Diiron trioxide	Canada, Alberta: OEL 8 hour	5 mg/m³ (respirable fraction)
		Canada, BC: OEL STEL	10 mg/m³ (Smoke, calculated as Fe)
		Canada, BC: OEL TWA	10 mg/m³ (oxide, red, inhalable fraction)
		Canada, BC: OEL TWA	3 mg/m³ (oxide, red, respirable fraction)
		Canada, BC: OEL TWA	5 mg/m³ (oxide dust)
		Canada, BC: OEL TWA	5 mg/m³ (Smoke, calculated as Fe)
		Canada, Québec: VEMP	10 mg/m³ (red)
		Canada, Québec: VEMP	5 mg/m³
		USA: ACGIH: TWA	5 mg/m³ (respirable fraction)
		USA: IDLH: TWA	2500 Fe/m3 (dust and Smoke)
		USA: OSHA: TWA	10 mg/m³ (Iron oxide, fume; calculated as Fe)
		USA: OSHA: TWA	15 mg/m³ (inhalable fraction, red)
		USA: OSHA: TWA	5 mg/m³ (red, respirable fraction)
7789-75-5	Calcium fluoride	Canada, Alberta: OEL 8 hour	2.5 mg/m³ (calculated as F)
		Canada, BC: OEL TWA	2.5 mg/m³ (calculated as F)
		Canada, Québec: VEMP	2.5 mg/m³ (calculated as F)
		USA: ACGIH: TWA	2.5 mg/m³ (Fluorides, calculated as F)
		USA: IDLH: TWA	250 F/m3
		USA: NIOSH: TWA	2.5 mg/m³ (calculated as F)
		USA: OSHA: TWA	2.5 mg/m³ (calculated as F)
7782-42-5	Graphite	Canada, Alberta: OEL 8 hour	2 mg/m³ (respirable fraction)
		Canada, BC: OEL TWA	2 mg/m³ (respirable fraction)
		Canada, Québec: VEMP	2 mg/m³
		USA: ACGIH: TWA	2 mg/m³ (respirable fraction)
		USA: IDLH: TWA	1250 mg/m³
		USA: NIOSH: TWA	2.5 mg/m³ (respirable fraction)
		USA: OSHA: TWA	15 mg/m³ (inhalable fraction)
		USA: OSHA: TWA	15 mppcf
		USA: OSHA: TWA	5 mg/m³ (respirable fraction)

CAS No.	Designation	Type	Limit value
1308-38-9	Chromium (III) oxide	Canada, Alberta: OEL 8 hour	0.5 mg/m³
		Canada, BC: OEL TWA	0.5 mg/m³
		Canada, Québec: VEMP	0.5 mg/m³
		USA: ACGIH: TWA	0.5 mg/m³ (inhalable fraction)
		USA: IDLH: TWA	25 Cr(III)/m3
		USA: NIOSH: TWA	0.5 mg/m³
		USA: OSHA: TWA	0.5 mg/m³
7631-86-9	Silicon dioxide	USA: IDLH: TWA	3000 mg/m³
		USA: NIOSH: TWA	6 mg/m³
		USA: OSHA: TWA	20 mppcf
		USA: OSHA: TWA	80 mg/m³ (total dust)
1309-48-4	Magnesium oxide	Canada, Alberta: OEL 8 hour	10 mg/m³
		Canada, BC: OEL STEL	10 mg/m³ (respirable fraction, Smoke and Dusts)
		Canada, BC: OEL TWA	10 mg/m³ (Smoke, inhalable fraction)
		Canada, BC: OEL TWA	3 mg/m³ (respirable fraction, Smoke and Dusts)
		Canada, Québec: VEMP	10 mg/m³
		USA: ACGIH: TWA	10 mg/m³ (inhalable fraction)
		USA: IDLH: TWA	750 mg/m³ (Smoke)
		USA: OSHA: TWA	15 mg/m³
1314-36-9	Yttrium oxide	USA: IDLH: TWA	500 Y/m3
1305-78-8	Calcium oxide	Canada, Alberta: OEL 8 hour	2 mg/m³
		Canada, BC: OEL TWA	2 mg/m³
		Canada, Québec: VEMP	2 mg/m³
		USA: ACGIH: TWA	2 mg/m³
		USA: IDLH: TWA	25 mg/m³
		USA: NIOSH: TWA	2 mg/m³
		USA: OSHA: TWA	5 mg/m³

CAS No.	Designation	Type	Limit value
14808-60-7	Quartz (SiO2)	Canada, Alberta: OEL 8 hour	0.025 mg/m³
		Canada, BC: OEL TWA	0.025 mg/m³
		Canada, Ontario: OEL TWA	0.1 mg/m³ (respirable fraction, designated Substance Reg.490/ 09)
		Canada, Québec: VEMP	0.1 mg/m³ (respirable fraction)
		USA: ACGIH: TWA	0.025 mg/m³ (respirable fraction)
		USA: IDLH: TWA	25 mg/m³ (respirable fraction, (cristobalite/tridymite)
		USA: IDLH: TWA	50 mg/m³ (respirable fraction, quartz/tripoli)
		USA: NIOSH: TWA	0.05 mg/m³ (respirable fraction)
		USA: OSHA: TWA	10 mg/m³/% SiO2+ 2 (respirable fraction)
		USA: OSHA: TWA	250 mppcf/%SiO2+5 (fine dust)
		USA: OSHA: TWA	30 mg/m³/% SiO2+ 2 (inhalable fraction)
50-00-0	Formaldehyde	Canada, Alberta: OEL 8 hour	0.9 mg/m³; 0.75 ppm
		Canada, Alberta: OEL Ceiling	1.3 mg/m³; 1 ppm
		Canada, BC: OEL STEL	0.3 ppm
		Canada, BC: OEL TWA	0.1 ppm
		Canada, Ontario: OEL Ceiling	1.5 ppm
		Canada, Ontario: OEL STEL	1 ppm
		Canada, Québec: Plafond	3 mg/m³; 2 ppm
		USA: ACGIH: STEL	0.3 ppm (DSEN,RSEN,A1)
		USA: ACGIH: TWA	0.1 ppm (DSEN,RSEN,A1)
		USA: IDLH: TWA	20 ppm
		USA: NIOSH: Ceiling	0.1 ppm
		USA: NIOSH: TWA	0.016 ppm
		USA: OSHA: STEL	2 ppm
		USA: OSHA: TWA	0.75 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
-	Reaction mass of potassium aluminium tetrafluoride and tripotassium hexafluoroaluminate	USA: ACGIH-BEI, blood	3 mg/L	Fluorides	end of exposure or end of shift
		USA: ACGIH-BEI, urine	2 mg/L	Fluorides	Prior to shift
13775-53-6	Trisodium hexafluoroaluminate (cryolite)	USA: ACGIH-BEI, blood	3 mg/L	Fluorides	end of exposure or end of shift
		USA: ACGIH-BEI, urine	2 mg/L	Fluorides	Prior to shift
7789-75-5	Calcium fluoride	USA: ACGIH-BEI, blood	3 mg/L	Fluorides	end of exposure or end of shift
		USA: ACGIH-BEI, urine	2 mg/L	Fluorides	Prior to shift

Engineering controls

Provide good ventilation and/or an exhaust system in the work area.
Technical measures and the application of suitable work processes have priority over personal protection equipment.
In case of development of vapors or dust: The use of local exhaust ventilation is recommended.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing and shoes.

For mechanical processing: Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Use appropriate respiratory protection.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

General hygiene considerations:

Do not inhale substance. Avoid contact with skin and eyes.
When using do not eat, drink or smoke. Take off contaminated clothing and wash it before reuse.
Wash hands before breaks and after work.
Work place should be equipped with a shower and an eye rinsing apparatus. Obtain special instructions before use.

Environmental exposure controls

Do not allow to penetrate into soil, waterbodies or drains.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Physical state at 68 °F (20 °C) and 101.3 kPa: solid Color: varying colors
Odor:	No data available
Odor threshold:	No data available
pH:	Not applicable
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	Not applicable
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	No data available
Solubility:	No data available
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Additional information:	No data available

10. Stability and reactivity

Reactivity: no data available

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions:
No hazardous reaction when handled and stored according to provisions.

Conditions to avoid: No data available

Incompatible materials: Oxidizing agents, acids.

Hazardous decomposition products:
At temperatures above 482 °F (250 °C) hazardous decomposition products may be generated.

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.
Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.

Serious eye damage/irritation: Eye Damage - Category 1 = Causes serious eye damage.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Carcinogenicity - Category 1A = May cause cancer.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Toxic to Reproduction (Lactation) = May cause harm to breast-fed children.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) -
Category 1 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Lack of data.

Other information:

Information about Aluminum potassium fluoride:
LD50, Rat, oral: >2000 mg/kg
LC50, Rat, inhalative: > 3.4 mg/L/h
LD50, Rabbit, dermal: >2000 mg/kg

Information about Trisodium hexafluoroaluminate (cryolite):
LD50, Rat, oral: >5000 mg/kg
LC50, Rat, inhalative: 4.47 mg/L/4h
LD50, Rabbit, dermal: >2100 mg/kg

For carcinogenic effects
Information about Titanium dioxide:
IARC Rating: Group 2B
OSHA Carcinogen: not listed
NTP Rating: not listed

Information about Diiron trioxide:
IARC Rating: Group 3
OSHA Carcinogen: not listed
NTP Rating: not listed

Information about Polyethylene:
IARC Rating: Group 3
OSHA Carcinogen: not listed
NTP Rating: not listed

Information about Silicon dioxide:
IARC Rating: Group 3
OSHA Carcinogen: not listed
NTP Rating: not listed

Information about Quartz (SiO2):
IARC Rating: Group 1
OSHA Carcinogen: not listed
NTP Rating: listed

Information about Formaldehyde:
IARC Rating: Group 1
OSHA Carcinogen: listed
NTP Rating: listed

Symptoms

In case of inhalation: Inhalation of dust may cause irritation of the respiratory system.
Irritation of nose, throat, lung
In case of ingestion: Can damage your health.
After contact with skin: Can be irritating because of mechanical abrasion.
After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Harmful to aquatic life with long lasting effects.

Information about Trisodium hexafluoroaluminate (cryolite):
Algae toxicity:
EC50 Pseudokirchneriella subcapitata (green algae): 8.8 mg/L/72h (OECD 201)
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 156 mg/L/48h (OECD 202)
Fish toxicity:
LC50 Danio rerio (zebrafish): 99 mg/L/96h (OECD 203)

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Dispose of waste according to applicable legislation.

Package

Recommendation: Dispose of waste according to applicable legislation. Packing can be recycled or disposed of.

14. Transport information

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR:
Not restricted

Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR:
not applicable

Packing group

ADR/RID, IMDG, IATA-DGR:
not applicable

Environmental hazards

Marine pollutant: no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

Canada: Transportation of Dangerous Goods (TDG)

Shipping name: Not restricted

Sea transport (IMDG)

Proper shipping name: Not restricted
Marine pollutant: no

Air transport (IATA)

Proper shipping name: Not restricted

Further information

No dangerous good in sense of these transport regulations.

15. Regulatory information

National regulations - U.S. Federal Regulations

Aluminium oxide:	TSCA Inventory: listed TSCA HPVC: not listed Other Environmental Laws: SARA Title III Section 313, Toxic Release: Conc. 1.0% / Threshold Standard NIOSH Recommendations: Occupational Health Guideline: 0021
Silicon carbide:	TSCA Inventory: listed TSCA HPVC: not listed NIOSH Recommendations: Occupational Health Guideline: 0555
Zirconium dioxide:	TSCA Inventory: listed TSCA HPVC: not listed
Iron disulfide (pyrite):	TSCA Inventory: listed TSCA HPVC: not listed
Reaction mass of potassium aluminium tetrafluoride and tripotassium hexafluoroaluminate:	TSCA Inventory: listed TSCA HPVC: not listed
Tripotassium hexafluoroaluminate:	TSCA Inventory: listed TSCA HPVC: not listed
Trisodium hexafluoroaluminate (cryolite):	TSCA Inventory: listed TSCA HPVC: not listed
Fibre glass weaves:	TSCA Inventory: listed; UVCB TSCA HPVC: not listed
Zinc sulphide:	TSCA Inventory: listed TSCA HPVC: not listed
Calcium carbonate:	TSCA Inventory: listed TSCA HPVC: not listed
Manganese dichloride:	TSCA Inventory: listed TSCA HPVC: not listed
Titanium dioxide:	TSCA Inventory: listed TSCA HPVC: not listed Carcinogen Status: IARC Rating: Group 2B OSHA Carcinogen: not listed NTP Rating: not listed NIOSH Recommendations: Occupational Health Guideline: 0617
Diiron trioxide:	TSCA Inventory: listed TSCA HPVC: not listed Carcinogen Status: IARC Rating: Group 3 OSHA Carcinogen: not listed NTP Rating: not listed NIOSH Recommendations: Occupational Health Guideline: 0344

Polyethylene:	TSCA Inventory: listed; EPA flags XU TSCA HPVC: not listed Carcinogen Status: IARC Rating: Group 3 OSHA Carcinogen: not listed NTP Rating: not listed
Calcium fluoride:	TSCA Inventory: listed TSCA HPVC: not listed
Manganese carbonate:	TSCA Inventory: listed TSCA HPVC: not listed
Graphite:	TSCA Inventory: listed TSCA HPVC: not listed NIOSH Recommendations: Occupational Health Guideline: 0306
Chromium (III) oxide:	TSCA Inventory: listed TSCA HPVC: not listed
Lanthanum oxide:	TSCA Inventory: listed TSCA HPVC: not listed
Silicon dioxide:	TSCA Inventory: listed TSCA HPVC: not listed Carcinogen Status: IARC Rating: Group 3 OSHA Carcinogen: not listed NTP Rating: not listed NIOSH Recommendations: Occupational Health Guideline: 0552
Magnesium oxide:	TSCA Inventory: listed TSCA HPVC: not listed NIOSH Recommendations: Occupational Health Guideline: 0374
Yttrium oxide:	TSCA Inventory: listed TSCA HPVC: not listed
Calcium oxide:	TSCA Inventory: listed TSCA HPVC: not listed NIOSH Recommendations: Occupational Health Guideline: 0093
Quartz (SiO2):	TSCA Inventory: listed TSCA HPVC: not listed Carcinogen Status: IARC Rating: Group 1 OSHA Carcinogen: not listed NTP Rating: listed NIOSH Recommendations: Occupational Health Guideline: 0553
Hafnium dioxide:	TSCA Inventory: listed TSCA HPVC: not listed

Formaldehyde:

TSCA Inventory: listed
TSCA HPVC: not listed
Carcinogen Status:
IARC Rating: Group 1
OSHA Carcinogen: listed
NTP Rating: listed
Clean Air Act:
Accidental Release Prevention: Threshold 15000 lbs. / Basis for listing = b
Hazardous Air Pollutants: yes
SOCMI Chemical: yes
Clean Water Act:
Hazardous Substances: RQ 100 lbs.
Other Environmental Laws:
CERCLA: RQ 100 lbs.
RCRA Hazardous Wastes: Code U122
SARA Title III Section 302, EHS: TPQ 500 lbs. / RQ 100 lbs.
SARA Title III Section 313, Toxic Release: Conc. 0.1% / Threshold Standard
NIOSH Recommendations:
Current Intelligence Bulletin: 81-111, 86-122
Occupational Health Guideline: 0293*
OSHA Process Safety Management: Threshold 1000 lbs.

National regulations - U.S. State Regulations

Aluminium oxide:
Delaware Air Quality Management List:
DRQ: 100 - RQ State: State requirement differs from Federal
Massachusetts Haz. Substance codes: F9
Minnesota Haz. Substance:
Codes: A - Ratings: 10.16 - Status: Title III. TRI.
New Jersey RTK Hazardous Substance:
DOT: - - Sub No.: 2891 - TPQ: -
Pennsylvania Haz. Substance code: E
Washington Air Contaminant:
TWA: 10 mg

Zirconium dioxide:
Massachusetts Haz. Substance codes: 2

Titanium dioxide:
California Proposition 65: cancer

Diiron trioxide:
Idaho Air Pollutant List:
Title 585 -- AAC: 0.25 -- EL: 0.333 -- WEL: 5
Title 586 -
Massachusetts Haz. Substance codes: 2
Pennsylvania Haz. Substance code: -
Washington Air Contaminant:
TWA: 5 mg

Quartz (SiO2):
California Proposition 65: cancer

Formaldehyde:
California Proposition 65 code: C
Delaware Air Quality Management List:
DRQ: 100 - RQ State: Federal Regulations Apply
Idaho Air Pollutant List:
Title 585: AAC: - EL: - OEL: - Title 586: AAAC: 7.7E-02 - EL: 5/1E-04 - OEF: 1.3E-05
Maine: HAP - 1000
Massachusetts Haz. Substance codes: 1,2,3,4,5,6,7 *E*C* F6
Minnesota Haz. Substance:
Codes: ANORT - Ratings: 10.91 - Status: Air Pollutant. Carcinogen. Title III. TRI.
New Jersey Extraordinarily Hazardous Substance:
EPA Threshold: - NJ Threshold: 175 - NJ Group: II - NJ Table: I Part A - NJ Basis: Not on List
New Jersey RTK Hazardous Substance:
DOT: 1198 - Sub No.: 0946 - TPQ: - EHS: Yes
New York List of Hazardous Substances:
RQ-Air: 100 - RQ-Land: 1 - Note: No Note Associated with this chemical.
Pennsylvania Haz. Substance code: ES
Washington Air Contaminant:
TWA: 75 ppm - - mg - STEL: 2 ppm - - mg - Ceiling: - ppm - - mg - Skin: -
West Virginia Toxic Air Pollutant List (Pounds per Year): 1,000
California Proposition 65: cancer

National regulations - Canada

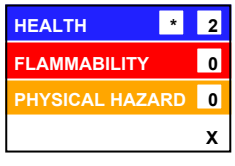
Aluminium oxide:	DSL: listed
Silicon carbide:	DSL: listed
Zirconium dioxide:	DSL: listed
Iron disulfide (pyrite):	NDSL: listed
Reaction mass of potassium aluminium tetrafluoride and tripotassium hexafluoroaluminate:	DSL: listed
Tripotassium hexafluoroaluminate:	NDSL: listed
Trisodium hexafluoroaluminate (cryolite):	DSL: listed
Zinc sulphide:	DSL: listed
Calcium carbonate:	DSL: listed
Manganese dichloride:	DSL: listed
Titanium dioxide:	DSL: listed
Diiron trioxide:	DSL: listed
Polyethylene:	DSL: listed
Calcium fluoride:	DSL: listed
Manganese carbonate:	DSL: listed
Graphite:	DSL: listed
Chromium (III) oxide:	DSL: listed
Lanthanum oxide:	DSL: listed
Silicon dioxide:	DSL: listed
Magnesium oxide:	DSL: listed
Yttrium oxide:	DSL: listed
Calcium oxide:	DSL: listed
Quartz (SiO2):	DSL: listed
Hafnium dioxide:	DSL: listed
Formaldehyde:	DSL: listed

16. Other information

Hazard rating systems:

NFPA Hazard Rating:
Health: 2 (Moderate)
Fire: 0 (Minimal)
Reactivity: 0 (Minimal)

HMIS Version III Rating:
Health: 2 (Moderate) - Chronic effects
Flammability: 0 (Minimal)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor



Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
STOT RE: Specific target organ toxicity - repeated exposure
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
TRGS: Technical Rules for Hazardous Substances
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit
WHMIS: Workplace Hazardous Materials Information System

Reason of change: Changes in section 3: Composition / Information on ingredients
Date of first version: Dec/18/2015

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products.