




SAFETY DATA SHEET		Date of edition: 20/01/2010	
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SECTION 1 - IDENTIFICATION	Distributed by:
GHS product identifier: MICRONOX [®] Bk01	Laguna Clay Company
Other means of identification:	14400 Lomitas Ave
Recommended uses: Black pigment for paints, cement, concrete, asphalt...	City of Industry, CA 91746
Supplier's details: Iron supplier for glass industry.	1-800-4Laguna
Name: Productos Minerales para la Industria, S.A. (PROMINDSA).	info@lagunaclay.com
Address: Centro de Negocios Somport, Pta. 3, Of. 134-135, Ciudad del Transporte, 50.820-Zaragoza (Spain).	www.lagunaclay.com
Phone number: +34 976151074 Fax number: +34 976587133 E-mail: promindsa@promindsa.com	
Emergency phone number: +34 976151074 (Monday-Friday, 8:30 a.m. - 7:30 p.m.)	

SECTION 2 - HAZARDS IDENTIFICATION	
GHS Classification of the substance: HAZARDOUS SUBSTANCE, NON-DANGEROUS GOODS	
+ Physical hazards: None known.	
+ Health hazards:	Hazard category
- Specific target organ toxicity – Repeated exposure.....	2 (lung)
+ Environmental hazards: None known.	
GHS label elements:	
Signal words: Warning.	
Hazard symbols: Health hazard.	
Hazard statements:	
- May cause damage to lung through prolonged or repeated exposure by inhalation. (H373)	
Precautionary statements:	
+ General precautionary statements:	
- If medical advice is needed, have product container or label at hand. (P101)	
- Keep out of reach of children. (P102)	
- Read label before use. (P103)	
+ Prevention:	
- Do not breathe dust. (P260).	
+ Response:	
- Get medical advice/attention if you feel unwell. (P314)	
+ Disposal:	
- Dispose of contents/container in accordance with local/regional/national/international regulations. (P501)	
Other hazards not classified by GHS: None known.	
Summary: None of the constituents of this product are "especially" dangerous substances for health, transport and environment because they are not included in the lists of the European regulations in force on these issues (see Section 15). However, the product is hazardous because it contains two minerals which are referred as health hazards by some Organizations:	
- Quartz (≤0.5%, CAS 14808-60-7): Long-term exposure to quartz dust (α-SiO ₂ = crystalline silica) through inhalation may cause a special kind of fibrosis (scarring) of the lungs called <i>silicosis</i> , which produces a progressive disabling and sometimes may be fatal. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. In addition, quartz dust from occupational sources is classified as Group 1 (Carcinogen to humans) by the International Agency for Research on Cancer.	
In fact, and taking into account the European Association of Silica Producers (EUROSIL) states that the classification of crystalline silica in the CLP must be <i>Specific Target Organ Toxicity – Repeated exposure, Hazard Category 2 (STOT Rep. 2)</i> in its document " <i>(Respirable) Crystalline Silica in REACH and the CLP Regulation</i> " (http://www.ima-reach-hub.eu/index.php?option=com_docman&task=doc_download&gid=53), we have applied this classification to the present product.	
- Mica-group minerals (≤ 0.3 wt %, CAS 12001-26-2): Repeated overexposure to dust of mica may irritate the lungs and may cause lung scarring (<i>fibrotic pneumoconiosis</i>). This produces an abnormal chest x-ray, cough and shortness of breath.	

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On the other hand, and taking into account this product is a solid black pigment with a powder form, ingestion of high dosages of this product is unlikely. If this would occur, gastrointestinal disturbances (salivation, nausea, vomiting and diarrhoea) may appear, as it would happen with any other non toxic dust.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Chemical identity: Magnetite, (Natural) triiron tetraoxide (Fe₃O₄), Ferrous-ferric oxide, Iron (II) diiron (III) oxide (by IUPAC), 98.5 (±1.0) wt %.

Common names and synonyms: Magnetite, Magnetic iron oxide, (Natural) Black Iron Oxide, (Natural) Iron (II, III) oxide, Pigment Black 11, C.I. 77499.

CAS number and other unique identifiers: CAS No.: 1309-38-2, EINECS No.: 215-169-8.

Impurities: This product is entirely of mineral origin (naturally occurring material). In addition to magnetite, it contains small amounts of some minerals that are gangues (impurities) of the iron deposit: zircon, α-quartz, mica-group minerals and traces of other accessory minerals that are not hazardous. The mineralogical composition of this product can be seen in the following table.

Constituents	Chemical formula	CAS No.	EINECS No.	Weight %
Magnetite	Fe ₃ O ₄	1309-38-2	215-169-8	98.5 ±1.0
Zircon (Zirconium silicate)	ZrSiO ₄	14940-68-2	239-019-6	≤ 0.7
α-Quartz	α-SiO ₂	14808-60-7	238-878-4	≤ 0.5
Mica-group minerals	K(Al,Mg,Fe ²⁺) ₂₋₃ (Si,Al) ₄ O ₁₀ (OH) ₂	12001-26-2	310-127-6**	≤ 0.3
Other accessory minerals	Non hazardous minerals	999999-99-4**	310-127-6**	≤ 0.5

** Generic CAS No or EINECS No to refer to any naturally occurring substance.

Regarding to *zircon*, and taking into account this mineral may contain significant amounts of radioactive isotopes of Th and U, in this case we can confirm this product is not a radioactive hazard in spite of having up to 0.7 wt % of zircon. In fact, the chemical analysis of the product by ICP-OES+MS indicate that it contains less than 3 and 5 ppm of Th and U respectively, which are normal values, i.e., similar and even lesser than those of the geochemical background of both chemical elements in soils and more frequent rocks of the earth crust.

SECTION 4 - FIRST-AID MEASURES

Description of the necessary first-aid measures:

Inhalation: If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing. If breathing difficulties develop, give oxygen. If respiratory irritation occurs, get medical attention.

Skin contact: This product does not cause skin irritation by itself, but this might happen by mechanical abrasion of the contaminated skin, as it would happen with any other dust. If skin irritation occurs, get medical attention.


Eye contact: This product does not cause eye irritation by itself, but this might happen by mechanical abrasion after eye contact. In this case, do not rub your eyes and rinse cautiously with water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation occurs, get medical attention.

Ingestion: Ingestion of high dosages of this product is unlikely. If this would occur, do not induce vomiting unless directed to do so by medical personnel. If victim is conscious and alert, give some cups of water. Seek medical attention immediately.

Most important symptoms / effects:

Acute symptoms: As would happen with any other non toxic dust, this product may cause sneezing, runny nose and coughing if enters airways through inhalation. High oral dosages may produce gastrointestinal disturbances (salivation, nausea, vomiting and diarrhoea).

Delayed symptoms: This product has small amounts of α-quartz (≤0.5 wt. %) and mica (≤0.3 wt. %), which may cause chronic lung diseases. So, a long-term overexposure to this product by inhalation might cause *pneumoconiosis* (with shortness of breath, chronic cough, dyspnoea and weakness) and/or *silicosis* (cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function).

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Indication of immediate medical attention and special treatment needed: Victims that have inhaled or ingested high dosages of this product must get immediate medical attention. Because of the delayed lung diseases that this product may cause, persons exposed or concerned must be check-up periodically.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: The product is non-combustible. So, use appropriate agents for surrounding fire. A water mist, fog or spray can be used to control dusting and cool this product. Avoid the use of high pressure water, which could generate dust.

Specific hazards arising from the chemical: This product is not flammable or explosive.

Special protective equipment and precaution for fire-fighters: Wear full protective clothing and self-contained breathing apparatus operated in the pressure demand or other positive pressure mode.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: This product may produce dust if released brusquely. In that case, do not breathe dust, ventilate the area of spillage, prevent further releases and forbid or limit foot and vehicular traffic to avoid the mechanical dispersion. Wear respiratory protection while cleaning up (Section 8). Protective clothing, dust-proof goggles and rubber/leather gloves are recommended.

Environmental precautions: This product is not an environmental hazard. However, because of its strong black colour, it may cause visual impact. Therefore, it must be cleaned up.

Methods and materials for containment and cleaning up: Use cleaning methods that do not generate dust. The following equipment is recommended for cleaning up: vacuum with a high-efficiency particulate filter, broom and wet mop, shovel or scoop and sacks or bags. Residual material should then be cleared, using the process of wet sweeping to avoid dust generation. Place the material spilled in containers in accordance with local/regional/national/international regulations for disposal.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling: Do not breathe dust, avoid handling that can generate dust and do not permit dust to collect on workplace. Use sufficient local exhaust ventilation or dust extraction to reduce the levels of respirable crystalline silica and mica and ferrous-ferric oxide below their occupational/permisible exposure limits (OEL/PEL) (see section 8). If those methods cannot reduce airborne exposure levels below permisible limits, wear a respirator approved for silica dust (Section 8). Avoid contact with eyes and skin to prevent mechanical irritation. Protective clothing, dust-proof goggles and leather/rubber gloves are recommended. Wash or vacuum clothing that has become dusty and observe good personal hygiene.

Conditions for safe storage, including any incompatibilities: Store at moderate temperatures in a dry and well ventilated area away from strong oxidizers and acids. Ensure containers are adequately labelled and protected against physical damage.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters: Occupational exposure limits.

Constituent (CAS No)	NIOSH-IDLH (mg/m ³)	NIOSH-REL (mg/m ³)	ACGIH-TLV (mg/m ³)	OSHA-PEL (mg/m ³)	MSHA STANDARD (mg/m ³)
Magnetite Fe ₃ O ₄ (1309-38-2)	2500 (RD)	5 (RD)	5 (RD)	8 hours TWA 15 (TD) 8 hours TWA 5 (RD)	Nuisance particulates
Zircon ZrSiO ₄ (14940-68-2)	n.f.	n.f.	TWA 5 (as Zr) STEL 10 (as Zr)	8 hours TWA 5 (as Zr)	n.f.
α-Quartz α-SiO ₂ (14808-60-7)	50 (RD)	10 hour TWA 0.05 (RD)	0.025 (RD)	8 h. TWA 30/(%SiO ₂ +2) (TD) 8 h. TWA 10/(%SiO ₂ +2) (RD)	30/2(%SiO ₂ +3) (TD) 10/(%respir. SiO ₂ + 2) (RD)
Mica (12001-26-2)	1500 (RD)	10 hr. TWA 3	3 (RD)	8 hours TWA 3 (RD)	TWA 20 mppcf (RD)



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NIOSH: National Institute for Occupational Safety and Health. **ACGIH:** American Conference of Governmental Industrial Hygienists. **OSHA:** Occupational Safety and Health Administration. **MSHA:** Mine Safety Health Administration. **PEL:** Permissible exposure limit. **IDHL:** Immediately dangerous to health and life. **REL:** Recommended exposure limit. **TLV:** Threshold limit value. **MAK:** Max. value. **(RD):** Respirable dust or fume. **(TD):** Total dust. **Mppcf:** million particles per cubic foot. **n.f.:** Not found. **OEL:** Occupational exposure limit. **LTEL:** Long-term exposure limit. **STEL:** Short-term exposure limit. **TWA:** Time-weighted average.

Constituent (CAS No)	OEL-Australia	OEL-Austria	OEL-Belgium	TLV-Bulgaria	OEL-Denmark	OEL-Egypt	OEL-Finland	OEL-France	OEL-Germany	OEL-Italy	OEL-Japan	TLV-Jordan	TLV-Korea
Magnetite** (1309-38-2)	TWA 5 (RD)	MAK 6 (RD)	TWA 5 (RD)	TWA 5	TWA 3.5	TWA 5 (RD)	TWA 5 (RD)	VME 5 (RD)	MAK 6 (RD)	TWA 5 STEL 10	4 (TD)	TWA 5	TWA 5
Zircon (14940-68-2)	TWA 5 STEL 10	n.f.	TWA 5*	TWA 5*	TWA 5*	TWA 5*	TWA 5*	n.f.	MAK 5 (RD)	n.f.	n.f.	TWA 5*	TWA 5*
α-Quartz (14808-60-7)	TWA 0.1	MAK 0.15	TWA 0.1 (RD)	TWA 0.1 (RD)	TWA 0.3 (TD)-0.1 (RD)	n.f.	TWA 0.2	VME 0.1 (RD)	MAK 0.15	TLV 0.05	Cont. 0.03 (RD)	TWA 0.1 (RD)	TWA 0.1 (RD)
Mica (12001-26-2)	TWA 2.5 (RD)	n.f.	TWA 3 (RD)	TWA 3 (RD)	TWA 2.5	n.f.	TWA 3	VME 5 (RD)	MAK 6	n.f.	n.f.	TWA 3 (RD)	TWA 3

Data without units are expressed in mg/m³. * : As Zirconium (CAS No 7440-67-7) or zirconium compounds s.l. Cont = continuous. ** All data of these tables belonging to magnetite correspond really to iron oxide dust or fume, with CAS No 1309-38-2 (iron trioxide), which is the iron compound more similar to magnetite that there are data on national occupational exposure limits of.

Constituent (CAS No)	OEL-Netherlands	TLV-N. Zealand	OEL-Norway	OEL-Philipp.	OEL-Poland	OEL-Russia	TLV-Singap.	OEL-Sweden	OEL-Switzerl.	OEL-Thail.	OEL-Turkey	OEL-UK	TLV-Vietnam
Magnetite** (1309-38-2)	MAC-TGC 5 (RD)	TWA 5	TWA 3	TWA 10	MAK TWA 5 STEL 10	TWA 6	TWA 5	TWA 3.5 (RD)	MAK-wk 3 (RD)	TWA 10 (RD)	TWA 10 (RD)	LTEL 10 (TD)-4 (RD) STEL 10	TWA 5
Zircon (14940-68-2)	MAC-TGC 5*	TWA 5*	n.f.	TWA 5*	TWA 5*	TWA 6*	TWA 5*	n.f.	MAK-wk 5*	n.f.	TWA 5*	TWA 5 STEL 10	TWA 5*
α-Quartz (14808-60-7)	MAC-TGC 0.075	TWA 0.2 (RD)	TWA 0.3 (TD) 0.1 (RD)	n.f.	n.f.	TWA 1 STEL 3	TWA 0.1	NGV 0.1 (RD)	MAK-wk 0.15	TWA 30 (TD) 10 (RD)	n.f.	TWA 0.3 (RD)	TWA 0.1
Mica (12001-26-2)	MAC-TGC 5 (TD) - 2.5 (RD)	TWA 3	TWA 3	n.f.	n.f.	n.f.	TWA 3 (RD)	n.f.	MAK-wk 3	n.f.	n.f.	TWA 10 (TD)-0.8 (RD)	TWA 3 (RD)

Appropriate engineering controls: Maintain air concentrations of the hazardous substances below the occupational exposure limits. Use local exhaust ventilation or a dust extraction if necessary.

Individual protection measures:


Eye protection: Dust-proof goggles are recommended to avoid mechanical irritation after friction.

Skin protection: If prolonged or repeated skin contact is likely, bodysuit, boots and leather/rubber gloves are recommended to avoid mechanical irritation by friction.

Respiratory protection: If air concentrations of hazardous substances are unknown or higher than their occupational exposure limits, wear an approved air purifying dust respirator. Follow the regulations found in European Standard EN 149 or OSHA 29CFR 1910.134 to select the respirator. Taking into account that quartz has the lowest OEL in this product, use the table below to choose the adequate respirator. Data come from the NIOSH's web page <http://www.cdc.gov/NIOSH/npg/npgd0553.html>.

Airborne concentration of silica	Type of respirator	APF needed
Up to 0.5 mg/m ³	-Any half or full-facepiece air-purifying respirator with a HEPEF.....	10
Up to 1.25 mg/m ³	-Any powered, air-purifying respirator with a HPEF.....	25
	-Any supplied-air respirator operated in a continuous-flow mode.....	25
Up to 2.50 mg/m ³	-Any air-purifying, full-facepiece respirator with a HEPEF.....	50
	-Any powered, air-purifying respirator with a tight-fitting facepiece and a HPEF.....	50
Up to 25 mg/m ³	-Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.....	1,000

HEPEF: high efficiency particulate filter. APF (Assigned Protection Factor): minimum anticipated level of protection provided by each type of respirator. For example, an APF=25 means that the respirator should reduce the airborne concentration by a factor of 25, consequently if the airborne concentration is 150 µg/m³, a respirator with an APF = 25 will reduce its concentration to 6 µg/m³.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black solid powder with particle size smaller than 10 µm, i.e., with respirable size.

Odour: Odourless. **Odour threshold:** Not applicable.

pH: The pH-value of the water extract is 7 (±1).

Melting point / freezing point: The product is solid at normal conditions. Its exact melting point is unknown.

The melting points of its main constituents (≥99.5 wt. %) are in the following table:

	Chemical formula	Weight %	Melting point
Magnetite	Fe ₃ O ₄	98.5 ±1.0	≈1538 °C (2800 °F)
Zircon	ZrSiO ₄	≤ 0.7	≈ 2550 °C (4622 °F)
α-Quartz	α-SiO ₂	≤ 0.5	≈1710 °C (3110 °F)
Mica-group minerals	(K, H ₃ O, Na)(Al, Mg, Fe) ₂ (Si, Al) ₄ O ₁₀ (OH) ₂	≤ 0.3	1100 - 1400 °C (2012 - 2552 °F)

Initial boiling point and boiling range: Initial boiling point > 2000 °C (>3632 °F).

Flash point: Non-flammable.

Evaporation rate: Not applicable.

Flammability (solid, gas): Non-flammable.

Upper / lower flammability or explosive limits: Not applicable.

Explosion limits: Not applicable.

Vapour pressure: 0.0 mm Hg at 20 °C (68 °F).

Vapour density: Not applicable.

Relative density: 5.1 (±0.1) with respect to water at 3.98 °C (39.2 °F). **Bulk density:** 0.9 (±0.1) g/cm³

Solubility: Negligible (less than 0.1 wt. %) in water at 20° C (68 °F).

Partition coefficient: Not applicable.

Auto-ignition temperature: Not applicable.

Decomposition temperature: Fe₃O₄ decomposes at its melting temperature (1538 °C) giving out toxic iron oxide fumes. Zircon may disassociate to ZrO₂ and SiO₂ when heated in excess of 1540 °C.

Viscosity: Not applicable.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: The product is not self-reactive. Its constituents have been joined for over 300 million years.

Chemical stability: Stable under ordinary conditions of use and storage. Magnetite may oxidise at temperatures above 300 °C giving out γ-Fe₂O₃ (maghemite), which is a non hazardous substance. That reaction is slightly exothermic.

Possibility of hazardous reactions: None known.

Conditions to avoid: Avoid stirring or shaking up this product in order not to generate dust.

Incompatible materials: Calcium hypochlorite, carbon monoxide, hydrogen peroxide, hydrazine, fluorine, bromine pentafluoride, chlorine trifluoride, oxygen difluoride and strong acids (hydrofluoric, performic,...).

Hazardous decomposition products: None under ordinary conditions. Fe₃O₄ decomposes at its melting temperature (1538 °C) giving out toxic iron oxide fumes. Zircon may disassociate to ZrO₂ and SiO₂ when heated in excess of 1540 °C.

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: This product is a solid with a powder form. Its average particle size is near to 1 micron and its maximum particle size is 10 (±1) microns. So, the likely routes of exposure are inhalation, eye and skin contact. Ingestion of high dosages of this product is unlikely but not impossible.

Symptoms related to the physical, chemical and toxicological characteristics: The immediate symptoms are related to the physical form (powder) of the product because its particles has a rough shape and may cause mechanical irritation to airways, digestive tract, eyes and skin, as would happen with any other non toxic dust. So, symptoms such a sneezing, runny nose and coughing may suggest a short exposure to high dosages through inhalation, while gastrointestinal disturbances such a salivation, nausea, vomiting and diarrhoea may suggest that a very high dosage has been swallowed. In addition, mechanical irritation of contaminated eyes or



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skin may appear by friction, as for example, by rubbing. In any case, it is unlikely that a short overexposure to this product may cause any delayed or chronic adverse effect.

However, symptoms such as chronic cough, dyspnoea, shortness of breath, wheezing, reduced pulmonary function and weakness may indicate that a lung disease could be developing. In fact, this product contains mica and quartz, which may cause pulmonary diseases (*fibrosis, pneumoconiosis and silicosis*) after long overexposure by inhalation.

Immediate, delayed and chronic effects from short and long exposure: See last paragraph.

Numerical measures of toxicity:

	Route	Effects	Magnetite (≥97.0 %)	Quartz (≤0.5 %)	Zircon (≤0.7 %)	Mica (≤0.3 %)
Humans	Inhalation	Acute toxicity	IDHL	50 mg/m ³ or 0.05 mg/l	-	1500 mg/m ³
		Pneumoconiosis,...	LPTC	16 mppcf/8 hr./17.9 v-int.	-	-
		Cancer - death	LPLC	-	0.3 mg/m ³ / 10 year-int.	-
Dogs	Intravenous	Death	LPLC	20 mg/kg	-	-
Rats	Ingestion	Mortality 50%	LD50	>10000 mg/kg	500 mg/kg	-
		Gastroint. disturb.	LPTC	-	120 mg/kg	-
		Respiratory disturb.	LPTC	-	1 mg/kg	-
	Inhalation	Pneumoconiosis,...	LPTC	-	200 mg/kg	-
		Tumours (liver)	LPTC	-	50 mg/m ³ / 6 h./71 wk-int.	-
		Respiratory disturb.	LPTC	-	1 mg/kg	-
	Intratracheal	Death	LPLC	-	200 mg/kg	-
		No adverse effects	-	10-40 mg/kg bw/114 wk	-	-
	Intraleural	Lymphoma (blood)	LPTC	-	90 mg/kg	-
	Intravenous	Death	LPLC	-	90 mg/kg	-
		No adverse effects	-	3-14 mg/kg/9 inj.-3 wk	-	-
	Intraperitoneal	Focal cancer	LPTC	-	45 mg/kg	-
		Foc. tum. (8% spec.)	-	3x200 mg/kg/24 wk-int	-	-
	Implant	Focal tumours	LPTC	-	900 mg/kg	-
	Inhalation	Respiratory disturb.	LPTC	-	40 mg/kg	-
Intratracheal	Acute lung oedema	LPTC	-	17.6 mg/kg	-	
Intravenous	Death	LPLC	-	40 mg/kg	-	
Rabbit	On skin	Not irritating	-	No data about method.	-	-
Guinea pig	On skin	Not sensitizing	-	Maurer optimiz. test	-	-

LPTC: Lowest published toxic concentration. LPLC: Lowest publ. lethal concentration. IDHL: Immediately dangerous to health and life.
LD50: Lethal dosage for 50% of specimens. int: intermittent. con: continuous. -: No data found.

Interactive effects: No data are available.

Other information: This product contains quartz (≤0.5 wt. %), referred as a human carcinogen by IARC.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Aquatic toxicity: All the constituents of this product are minerals with a negligible solubility and low content of heavy metals. So, it is unlikely that may cause any adverse effect to waters and aquatic life.

Fish (fresh water): *Leuciscus idus*: 48h LC0: > 1000 mg/l. (no harmful effects)

Bacteria: *Pseudomonas fluorescens*: 24 h LC0>1000 mg/l (no harmful effects)


Terrestrial toxicity: All the constituents of this product occur naturally. In fact, they are common minerals of the earth's crust and soils. So, it is not anticipated to cause any adverse effect to plants or animals.

Persistence and degradability: The constituents of this product are not "readily biodegradable" due to their very low (negligible) solubilities and reactivities. On the other hand, magnetite (>97 wt. % in this product) can be extracted easily by magnetic methods.

Bio-accumulative potential: There is no evidence to suggest bioaccumulation will occur.

Mobility in soil: Accidental spillage of this dusty product may cause a shallow penetration in soil. However, is unlikely that this would cause adverse ecological effects because of the negligible solubility of its constituents. Besides, some of the constituents of this product are common minerals of soils.

Other adverse effects: Spillages of this product may cause visual impact due to its black colour.

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SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal methods: This product is not considered a hazardous waste by U.S. Resource Conservation and Recovery Act (RCRA) criteria neither by the Council Directive 91/689/EEC. Dispose of contents/container in accordance with local/regional/national/international environmental regulations. Avoid generating dust. Ensure that containers are empty prior to disposal. Keep out of drains, sewers, ditches and waterways to prevent occlusions.

SECTION 14 - TRANSPORT INFORMATION

Harmonised Commodity Code (Customs Tariff Number): 2821.10.00
UN Number: Not regulated.
UN proper shipping name: Not regulated.
Transport hazard class(es): This product is a non-hazardous goods.
Packing group (if applicable): Not applicable.
Environmental hazards: None.
Special precautions for users: If the container breaks accidentally during transport. DO NOT BREATHE DUST.
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable.

SECTION 15 - REGULATORY INFORMATION

INTERNATIONAL

Montreal Protocol: This product does not contain substances that produce the depletion of the Ozone Layer.
Kyoto Protocol: This product does not contain *Greenhouse Gases*.
Rotterdam Convention: This product is not subjected to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
Stockholm Convention: This product does not contain *Persistent Organic Pollutants*.
IARC (International Agency for Research on Cancer): Quartz (crystalline silica) is classified by IARC as a human carcinogen belonging to Group 1.

AUSTRALIA

NOHSC (National Occupational Health and Safety Commission): Quartz and Mica-group minerals are listed as health hazards according to NOHSC.


CANADA

WHMIS (Workplace Hazardous Materials Information System) Classification: Quartz is classified by WHMIS as very toxic material (Class D2A).
CEPA (Canadian Environmental Protection Act): "Respirable particulate matter less than or equal to 10 microns" is included on Priority Substances List (PSL) and Toxic Substances List (TSL) of CEPA Environmental Registry.

EUROPEAN COMMUNITY

None of the constituents of this product appears on the lists of the hazardous substances that are forbidden, restricted or submitted to special requirements by the following European regulations in force:

- Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.
- Directive 98/8/EC and its amendments on placing of biocidal products on the market and
- Council Regulations (EC) No 304/2003 and 689/2008 related to Export and Import of Dangerous Chemicals.
- Council Regulation (EC) No 1907/2006 on Registration, Evaluation and Authorization of Chemicals (REACH).
- Directive 67/548/EEC and Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
- Commission Regulation (EC) No 465/2008 about certain substances that are listed in ELNECS and may be persistent, bio-accumulating and toxic.

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UNITED STATES

CERCLA (Comprehensive Environmental Response Compensation and Liability Act): The components of this product are not classified as hazardous substances under regulations of CERCLA, 40 CFR §302.

EPCRA (Emergency Planning and Community Right-to-Know Act) and Clean Air Act, Section 112(r): None of the components of this product are subjected to the EPCRA and Clean Air Act.

FDA (U.S. Food and Drug Administration): This product does not comply with the specifications established by the U.S. F.D.A on colorants for food, drugs, cosmetics and medical devices.

NTP (National Toxicology Program): Respirable crystalline silica, primarily quartz dusts occurring in industrial and occupational settings, is classified as known to be a human carcinogen.

RCRA (Resource Conservation and Recovery Act): None of the components of the product is classified as a hazardous waste under the RCRA, or its regulations, 40 CFR §261 et seq.

SARA Title III: None of the components of this product are Extremely Hazardous Substances (EHS) under Section 302 neither toxic chemicals subject to the requirements of Section 313.

California Proposition 65: Crystalline silica (quartz) (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen.

STATUS AT SOME NATIONAL INVENTORIES OF EXISTING CHEMICAL SUBSTANCES

Constituents of the product	Australia	Canada		China	E.C.	Japan	Korea	N.Zealand	Nordic	Philippines	Sweden	U.S.
	AICS	DSL	NDSL	IECSC	EINECS	ENCS	ECL	NZIoC	SPIN	PICCS	KEMI	TSCA
CAS No 1309-38-2	Yes	Yes	No	Yes	Yes	No**	Yes	Yes	Yes	Yes**	No	Yes
CAS No 14940-68-2	Yes	Yes	No	Yes	Yes	No**	Yes	Yes	Yes	Yes**	No	Yes
CAS No 14808-60-7	Yes	Yes	No	Yes	Yes	Yes**	Yes	Yes	Yes	Yes**	Yes	Yes
CAS No 12001-26-2	Yes	Yes	No	Yes	No*	No**	Yes	Yes	Yes	Yes**	Yes	No*

AICS: Australian Inventory of Chemical Substances. DSL: Domestic Substances List. NDSL: Non-Domestic Substances List. IECSC: Inventory of Existing Chemical Substances in China. EINECS: European Inventory of New and Existing Chemical Substances. ENCS: Existing and New Chemical Substances of the Japanese MITI (Ministry of International Trade and Industry). ELC: Existing Chemicals List of South Korea. NZIoC: New Zealand Inventory of Chemicals. SPIN: Substances in Preparations in Nordic Countries (Denmark, Finland, Norway and Sweden). PICCS: Philippine Inventory of Chemicals and Chemical Substances. KEMI: Kemikalieinspektionen. TSCA: United States & Puerto Rico Toxic Substances Control Act of U.S. EPA (Environmental Protection Agency).

*Although some of the constituents are not listed on EINECS and TSCA Inventories, they are automatically included in those inventories because of their natural origin (*naturally occurring substances*). The CAS and EINECS numbers for those *naturally occurring substances* are 99999-99-4 and 310-127-6 respectively.

**The product is exempt for inclusion in ENCS and PICCS because of its natural origin (*naturally occurring substances*).

STATUS ON RIGHT-TO-KNOW STATAL INVENTORIES OF HAZARDOUS SUBSTANCES

Constituents of the product	CA	FL	IL	MA	MI	MN	NJ	PA	RI
Magnetite (CAS No 1309-38-2)	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No
Zircon (CAS No 14940-68-2)	Yes*	Yes*	No	Yes	No	Yes*	Yes	Yes	No
α-Quartz (CAS No 14808-60-7)	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Mica-group minerals (CAS No 12001-26-2)	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes

* As zirconium compounds

SECTION 16 - OTHER INFORMATION

Date of preparation: 2010/01/20 **Edition No:** 02 **Last changes updated:** Updating and new data

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text. It is the user's responsibility to satisfy itself as to the suitability and completeness of such information for its own particular use.