

SCHEDA DI SICUREZZA

[scheda tecnica LP-AD-COP160]



Terre coloranti naturali.

nome commerciale prodotto

CipiroX

nome tecnico di produzione

COLORANTE IN POLVERE

Prodotto da:

PROMINDSA

Centro de Negocios Somport, Pta. 3, Of. 124-127, Ciudad del Transporte,
50.820-Zaragoza (Spain)

telefono: +34 976151074 • email: promindsa@promindsa.com • website: www.promindsa.com

Confezionato da:

CIPIR s.r.l.

Via dell'Industria, 4/6 - 28885 Piedimulera (VB)

telefono: +39 0324 848041 • email: info@cipir.it • website: www.cipir.it

Codici articolo interessati

8012760803014 (B667) **Giallo** - 350 g

8012760803021 (9450) **Rosso** - 500 g

8012760804028 (711) **Marrone** - 500 g

8012760804011 (9313) **Nero** - 500 g



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SECTION 1 - IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

Product identifier (Trade Name): MICRONOX®R01, MICRONOX®R02, MICRONOX®R03, MICRONOX®R04, MICRONOX®R05, MICRONOX®R06, MICRONOX®R11, MICRONOX®R12, MICRONOX®R13, MICRONOX®R14, MICRONOX®R15, MICRONOX®R18 and MICRONOX®R35.

Product name: Diiron trioxide, hematite, α -Fe₂O₃.

CAS No.: 1317-60-8. **EINECS No.:** 215-275-4.

REACH Registration No.: 01-2119457614-35-0064.

Identified uses: Used by industry, mostly by professionals, as pigment mainly but not exclusively, in paints, cement, concrete, asphalt, ceramic, frits, glazes, fertilizers. Also as raw material of iron for glass industry, iron and steel applications, metallurgical processes and drilling fluids.

Uses advised against: Other uses are not recommended unless an assessment has been conducted before the start of that use, showing that the risks associated with their use are controlled.

Supplier's details:

Name: Productos Minerales para la Industria, S.A. (PROMINDSA).

Address: Centro de Negocios Somport, Pta. 3, Of. 124-127, Ciudad del Transporte, 50.820-Zaragoza (Spain).

Phone number: +34 976151074 **Fax number:** +34 976587133 **E-mail:** promindsa@promindsa.com

Emergency phone number: +34 647746966 (24 h.)

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the substance:

CLP classification: Substance not classified according to Regulation (EC) No. 1272/2008.

DSD classification: Substance not classified according to Directive 67/548/EEC.

GHS classification:

+ **Physical hazards:** None known.

+ **Health hazards:**

- Specific target organ toxicity – Repeated exposure..... 2 (lung)

+ **Environmental hazards:** None known.

Hazard category

2 (lung)

Labelling:

CLP labelling: STOT RE 2.

GHS labelling:

- 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 which do not result in classification: Handling and/or processing of this material may generate dust, which may cause mechanical irritation of the eyes, skin, nose and throat.

Summary: None of the constituents of these products provokes the classification under the Regulation (EC) No. 1272/2008. However, these products must be considered as hazardous because they contain three substances that are referred as health hazards by some Organizations:



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-Hematite (CAS 1317-60-8): Prolonged inhalation of natural (*hematite*) or synthetic ($\alpha\text{-Fe}_2\text{O}_3$, CAS 1309-37-1) diiron trioxide dust will cause roentgenologic changes in lung: the retained particles produce x-ray shadows indistinguishable from *fibrotic pneumoconiosis*. It has been named *siderosis* or *iron/hematite pneumoconiosis*. Most specialists regard these roentgenologic changes to be benign, without having any influence on lung function or progressing to fibrosis. However, some specialists believe the repeated exposure to iron oxide dust may cause a real *pneumoconiosis*, with chronic cough and shortness of breath. Likewise, a long-term exposure to diiron trioxide by direct contact with the eyes may stain them, leaving "rust rings" that although do not have any functional influence, may be unaesthetic.

-Mica-group minerals (CAS 12001-26-2): Repeated overexposure to dust of mica may irritate the lungs and may cause lung scarring (*fibrotic pneumoconiosis*). This produces an abnormal chest x-ray, cough and shortness of breath.

-Quartz (CAS 14808-60-7): Long-term exposure to quartz dust ($\alpha\text{-SiO}_2$ = crystalline silica) through inhalation may cause a special kind of fibrosis (scarring) of the lungs called *silicosis*, 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) has stated that the crystalline silica must be classified as *Specific Target Organ Toxicity - Repeated exposure, Hazard Category 2* (http://www.ima-reach-hub.eu/index.php?option=com_docman&task=doc_download&gid=53), the same classification has been applied to the present products.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Chemical identity: Diiron trioxide, hematite, $\alpha\text{-Fe}_2\text{O}_3$.

Common names and synonyms: Red Oxide, Iron Oxide Red, Ferric oxide, Pigment Red 102, C.I. 77941.

CAS number and other unique identifiers: CAS No.: 1317-60-8. EINECS No.: 215-275-4.

Constituents	Chemical formula	CAS No.	EINECS No.	Weight %
Hematite	$\alpha\text{-Fe}_2\text{O}_3$	1317-60-8	215-275-4	78 - 98
Dolomite	$\text{Ca}(\text{Mg,Fe})(\text{CO}_3)_2$	16389-88-1	240-440-2	≤ 11
Mica-group minerals	$\text{KAl}_2(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH})_2$	12001-26-2	310-127-6**	≤ 10
Quartz	$\alpha\text{-SiO}_2$	14808-60-7	238-878-4	≤ 4
Accessory minerals	Non hazardous minerals	999999-99-4**	310-127-6**	≤ 1

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

SECTION 4 - FIRST-AID MEASURES

Description of the necessary first-aid measures:

In case of inhalation: Move victim to fresh air and keep it warm and at rest. If breathing difficulties develop, give oxygen. If respiratory irritation occurs, get medical attention.

In case of skin contact: This product does not cause skin irritation by itself, but this might happen by abrasion of the contaminated skin. So, wash with plenty of soap and water after handling and wash contaminated clothing before reuse. If skin irritation occurs, get medical attention.

In case of eye contact: This product does not cause eye irritation by itself, but this might happen by abrasion after eye contamination. If the last occurs, flush eyes with plenty of water immediately, lifting the upper and lower eyelids occasionally. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If eye irritation occurs, get medical attention.

In case of ingestion: Ingestion of high dosages of this product is unlikely. If this would occur, do not induce vomiting. If victim is conscious and alert, give large quantities of water to drink. Get medical attention immediately.



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Most important symptoms / effects:

Acute symptoms: The product may cause irritation to the respiratory tract through inhalation (sneezing, runny nose, cough, sore throat, laryngitis, nausea and vomiting). High oral dosages may produce gastrointestinal disturbances (salivation, nausea, vomiting and diarrhoea) and abdominal pain.

Delayed symptoms: Long-term overexposure (6 to 10 years) to diiron trioxide dust through inhalation may mottle the lungs, a condition called *siderosis* that is generally considered as benign, although it causes x-ray shadows indistinguishable from fibrotic pneumoconiosis. However, some specialists believe that prolonged or repeated overexposure to diiron trioxide by inhalation may cause a real pneumoconiosis, with shortness of breath, chronic cough, dyspnoea and weakness. In addition, prolonged exposure by direct contact with eyes may stain them leaving "rust rings".

On the other hand, long-term exposure through inhalation may cause *pneumoconiosis* (with shortness of breath, chronic cough, dyspnoea and weakness) due to these products contain mica-group minerals, and/or *silicosis* (cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function) because of these products contain quartz (crystalline silica).

Indication of any 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 diseases that this product might cause, persons exposed or concerned must be check-up periodically. See Section 11 for more detailed information on health effects and symptoms.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable and unsuitable extinguishing media: The product is non-combustible. So, in case of fire use water spray (fog), foam, dry chemical or CO₂. Avoid the use of high pressure water, which could generate dust.

Specific hazards arising from the chemical: These products are not flammable or explosive.

Special protective equipment and precaution for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operated in positive pressure mode.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not breathe dust. Provide adequate ventilation. Put on appropriate personal protective equipment (see Section 8). Hazard of slipping on spilt product.

Environmental precautions: These products are not environmental hazards. In any case, avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up: Move containers from spill area and prevent entry into sewers, water courses, basements of confined areas. Avoid creating dusty conditions and prevent wind dispersal. Vacuum or sweep up the spillage and place in a designated, labelled waste container. Residual material should then be cleared by wet sweeping to avoid dust generation. Dispose of via a licensed waste disposal contractor.

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling: Do not breathe dust, avoid handling that can generate it 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, mica and ferric oxide below their occupational/permissible exposure limits (OEL/PEL) (see section 8). If those methods cannot reduce airborne exposure levels below the permissible 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.



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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.

Hazardous 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)
α-Fe ₂ O ₃ (1317-60-8)	2500 (RD)	5 (RD)	5 (RD)	8 hours TWA 15 (TD), 5 (RD)	Nuisance particulates
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)

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
α-Fe ₂ O ₃ (1317-60-8)	TWA 5 (RD)	MAK 6 (RD)	TWA 5 (RD)	TWA 5	TWA 3.5	TWA 5 (RD)	TWA 5 (RD)	VME 5 (RD)	MAK 1.5 (RD)	TWA 5 STEL10	4 (TD) 1 (RD)	TWA 5	TWA 5
α-SiO ₂ (14808-60-7)	TWA 0.1	MAK 0.15	TWA 0.1 (RD)	TWA 0.1 (RD) quartz	TWA 0.3 (TD) 0.1 (RD)	n.f.	TWA 0.2	VME 0.1 (RD)	MAK 0.15	TWA 0.15	continuous 0.03 (RD)	TWA 0.1 (RD) quartz	TWA 0.1 (RD) quartz
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.

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
α-Fe ₂ O ₃ (1317-60-8)	MAC-TGG 5	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
α-SiO ₂ (14808-60-7)	MAC-TGG 0.075	TWA 0.2 (RD)	TWA 0.3 (TD) 0.1 (RD)	n.f.	n.f.	TWA 1 STEL 3	TWA 0.1 quartz	NGV 0.1 (RD)	MAK-wk 0.15	TWA 30 (TD) 10 (RD)	n.f.	TWA 0.3 (RD)	TWA 0.1 quartz
Mica (12001-26-2)	MAC-TGG 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)

Recommended monitoring procedures: Because of these products contains constituents with exposure limits, personal or workplace atmosphere monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures:

Eye protection: Dust-proof goggles are recommended if handling this product.

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



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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 HEPF.....	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 HEPF.....	50
	-Any powered, air-purifying respirator with a tight-fitting facepiece and a HEPF.....	50
Up to 25 mg/m ³	-Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.....	1,000

HEPF: 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.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Reddish powder.

Odour: Odourless.

Odour threshold: Not applicable.

pH: The pH-value of the water extract is 7.0 (±3).

Melting point / freezing point: These products are solid at normal conditions. Their exact melting points are unknown. The melting or decomposition point of their main constituents (≥ 99 wt. %) are the following ones:

	Chemical formula	Melting or decomposition point
Hematite	α-Fe ₂ O ₃	≈1565 °C (2849 °F) melting
Dolomite	Ca(Mg,Fe)(CO ₃) ₂	≈860 °C (1580 °F) decomposition
Mica-group minerals	KAl ₂ [(Si ₃ AlO ₁₀)(OH) ₂]	900–1100 °C (1652–2012 °F) decomposition
Quartz	α-SiO ₂	≈1710 °C (3110 °F) melting

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: 4.5-5.0 with respect to water at 3.98 °C (39.2 °F).

Bulk density: 0.9-1.1 (±0.1) g/cm³

Solubility: Negligible (less than 0.2 wt. %) in water at 20° C (68 °F).

Partition coefficient: Not applicable.

Auto-ignition temperature: Not applicable.

Decomposition temperature: Dolomite decomposes between 800 and 900°C giving out carbon dioxide (CO₂). Mica decomposes between 900 and 1100°C giving of H₂O. The α-Fe₂O₃ decomposes at 1565 °C giving out toxic iron oxide fumes.

Viscosity: Not applicable.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: These products are not self-reactive.

Chemical stability: Stable under ordinary conditions of use and storage.

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. May evolve toxic fumes (iron oxides)



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when heated at 1565°C (2800°F) approximately.

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: These products are solid with a powder form. 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 these products because some of their particles have a rough and lamellar 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 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, these products contain mica and quartz, which may cause pulmonary diseases (*fibrosis*, *pneumoconiosis* and *silicosis*) after a long overexposure by inhalation. In addition, prolonged overexposure (6 to 10 years) to hematite dust may cause *siderosis*, that is referred as a benign condition generally but causes x-ray shadows indistinguishable from *fibrotic pneumoconiosis*. Besides, long-term exposure by direct contact with eyes may stain them leaving unaesthetic "rust rings".

Numerical measures of toxicity:

	Route	Effects		Quartz	Hematite	Mica
Humans	Inhalation	Acute toxicity	IDLH	50 mg/m ³	2500 mg/m ³	1500 mg/m ³
		Pneumoconiosis,...	LPTC	16 mppcf/8 hr./17.9 y.	-	-
		Cancer - death	LPLC	0.3 mg/m ³ / 10 year	-	-
Dogs	Intravenous	Death	LPLC	20 mg/kg	-	-
Rats	Ingestion	Mortality 50%	LD50	500 mg/kg	5500 mg/kg	-
		Gastroint. disturb.	LPTC	120 mg/kg	-	-
	Inhalation	Mortality 50%	LC50	-	>50 mg/m ³	-
		Pneumoconiosis...	LPTC	200 mg/kg	-	-
	Intratracheal	Tumours (liver)	LPTC	50 mg/m ³ / 6 h./71 wk	-	-
		Respiratory disturb.	LPTC	1 mg/kg	12 mg/kg	-
	Intratracheal	Death	LPLC	200 mg/kg	-	-
		Lymphoma (blood)	LPTC	90 mg/kg	-	-
	Intravenous	Death	LPLC	90 mg/kg	-	-
	Intraperitoneal	Focal cancer	LPTC	45 mg/kg	-	-
Implant	Focal tumours	LPTC	900 mg/kg	-	-	
Mouse	Subcutaneous	Focal tumours	LPTC	-	135 mg/kg	-
	Ingestion	Mortality 50%	LD50	-	5400 mg/kg	-
	Inhalation	Respiratory disturb.	LPTC	40 mg/kg	-	-
	Intratracheal	Acute lung oedema	LPTC	17.6 mg/kg	-	-
	Intravenous	Death	LPLC	40 mg/kg	-	-

LPTC: Lowest published toxic concentration. LPLC: Lowest publ. lethal concentration. IDHL: Immediately dangerous to health and life. LD50/LC50: Lethal dosage/concentration for 50% of specimens. Int: intermittent. Con: continuous. -: without data

Interactive effects: No data are available.

Other information: These products contain quartz (< 4 wt. %), referred as a human carcinogen by IARC.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Aquatic toxicity: All the constituents of these products display a negligible solubility and low content of heavy metals. So, it is unlikely that may cause any adverse effect to waters and aquatic life.

Terrestrial toxicity: All the constituents of these products occur naturally. In fact, they are common minerals of



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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 these products are not "*readily biodegradable*" due to their very low (negligible) solubilities and reactivities.

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

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

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal methods: These products are not hazardous wastes 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 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): These products are 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: These products do not contain substances that produce the depletion of the Ozone Layer.

Kyoto Protocol: These products do not contain *Greenhouse Gases*.

Rotterdam Convention: These products are not subjected to the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Stockholm Convention: These products do 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.

EUROPEAN COMMUNITY

None of the constituents of these products appear 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 EINECS and may be persistent, bio-accumulating and toxic.

AUSTRALIA

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

CANADA



SAFETY DATA SHEET
According to Regulation (EC) No 453/2010
amending Annex II of Regulation (EC) No 1907/2006
MICRONOX® R SERIES

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WHMIS (Workplace Hazardous Materials Information System) Classification: Quartz is classified by WHMIS as very toxic material (Class D2A). The other constituents of the product are not classified by WHMIS.

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.

UNITED STATES

CERCLA (Comprehensive Environmental Response Compensation and Liability Act): The components of these products 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 these products are subjected to the EPCRA and Clean Air Act.

FDA (U.S. Food and Drug Administration): These products do 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 these products 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 these products 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 AICS	Canada		China IECSC	E.C. EINECS	Japan ENCS	Korea ECL	N.Zealand NZIoC	Nordic SPIN	Philippines PICCS	Sweden KEMI	U.S. TSCA
		DSL	NDSL									
CAS No 1317-60-8	Yes	No*	Yes	Yes	Yes	No**	Yes	Yes	Yes	Yes**	Yes	Yes
CAS No 12001-26-2	Yes	Yes	No	Yes	No*	No**	Yes	Yes	Yes	Yes**	Yes	No*
CAS No 16389-88-1	Yes	No*	Yes	Yes	Yes	No**	Yes	Yes	Yes	Yes**	Yes	Yes
CAS No 14808-60-7	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes**	Yes	Yes

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: Kemicalieinspektionen. 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 DSL, 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 999999-99-4 and 310-127-6 respectively.

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

SECTION 16 - OTHER INFORMATION

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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.