



Black Iron Oxide

Last revision: 2017-june-23

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SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH),
Anex II, as amended by Regulation (EU) No. 453/2010

MICRONOX® BK SERIES

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SECTION 1 - IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY

1.1 Product identifier (Trade Name): MICRONOX®BK01, MICRONOX®BK02 and MICRONOX®BK06M.

Product name: Triiron tetraoxide, Magnetite, Ferrous-ferric oxide, Iron (II) diiron (III) oxide, Fe₃O₄.

CAS No.: 1309-38-2/ 1317-61-9. **EINECS No.:** 215-169-8/215-277-5.

REACH Registration No.: 01-2119457646-28-0039.

1.2 Relevant identified uses of the substance or mixture: Inorganic Pigments.

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.

1.3 Supplier's details:

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

Address: Plataforma Logística de Zaragoza (PLA-ZA), C/ Messina 5, 50197 Zaragoza, Spain.

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

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

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance:

Classification according to Regulation (EC) No. 1272/2008 (CLP)

Not classified.

Classification according to Directive 67/548/EEC (DSD)

Not classified.

2.2 Label elements:

Hazard pictograms: Not applicable
Signal word: No signal word
Hazard statement: Not applicable

Precautionary statements:

+ **General precautionary statements:**

- If medical advice is needed, have product container or label at hand (P101).

+ **Prevention:**

- Do not breathe dust (P260).

+ **Response:**

- Get medical advice/attention if you feel unwell (P314).

2.3 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.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Chemical identity: Triiron tetraoxide, Magnetite, Ferrous-ferric oxide, Iron (II) diiron (III) oxide, Fe₃O₄.

Constituents	Chemical formula	CAS No.
Magnetite	Fe ₃ O ₄	1309-38-2

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SECTION 4 - FIRST-AID MEASURES

4.1 Description of the necessary first-aid measures:

In case of inhalation: Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur.

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 several 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.

4.2 Most important symptoms / effects:

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

Delayed symptoms: 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) due to the presence of quartz (crystalline silica). Furthermore, 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. In addition, prolonged exposure by direct contact with eyes may stain them leaving "rust rings".

4.3 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.

SECTION 5 - FIRE-FIGHTING MEASURES

5.1 Suitable and unsuitable extinguishing media:

In case of fire, use water spray (fog), foam, dry chemical or CO₂. Avoid the use of high pressure water, which could generate dust.

5.2 Specific hazards arising from the chemical:

These products are not flammable or explosive.

5.3 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

6.1 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. Avoid breathing dust. Provide adequate ventilation. Put on appropriate personal protective equipment (see Section 8). Hazard of slipping on spilt product.

6.2 Environmental precautions

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).

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6.3 Methods and material for containment and cleaning up:

Small spill: Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Large spill: Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections:

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling:

Do not breathe dust, avoid handling that can generate it and do not permit dust to collect on workplace. 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.

7.2 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.

7.3 Specific end uses. Recommendations: Not available.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

Exposure limit values: Not available.

Derived effect levels:

Long term-systemic effects.
Inhalation. DNEL: 10 mg/m³.

Long term-local effects.
Inhalation. DNEL: 10 mg/m³.

8.2 Exposure controls:

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: Recommended: Dust-protection mask.

Environmental exposure controls:

Technical measures: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 General information:

Appearance: Black solid powder.

Odour: Odourless.

Odour threshold: Not applicable.

pH: The pH-value of the water extract is 4.0-9.0

Melting point/ freezing point: 1538 °C (2800 °F).

Initial boiling point and boiling range: > 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: 5.0-4.8 with respect to water at 3.98 °C (39.2 °F) (depending on iron oxide content).

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

Partition coefficient: Not applicable.

Auto-ignition temperature: Not applicable.

Viscosity: Not applicable.

Explosive properties: Not applicable

Oxidising properties: Not applicable.

9.2 Other information: No additional information

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity: These products are not self-reactive.

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

10.3 Possibility of hazardous reactions: None known.

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

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

10.6 Hazardous decomposition products: None under ordinary conditions.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Component	Acute toxicity		Species
	LD50 oral	>5000 mg/kg	
Triiron tetraoxide [Fe ₃ O ₄] CAS: 1309-38-2/ 1317-61-9	LD50 skin		Rat
	LC50 inhalation		

Skin irritation/corrosion:

Non irritant

Serious eye damage/irritation

Non irritant

Respiratory or skin sensitisation:

Non sensitizing

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Potential chronic health effects:

Not relevant data

Carcinogenicity:

Not relevant data

Mutagenicity:

Not relevant data

Reproductive toxicity:

Not relevant data

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:

Immediate symptoms

Immediate symptoms are related to the physical form (powder) of these products because some of their particles 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.

Chronic symptoms

It is unlikely that a short overexposure to this product may cause any delayed or chronic adverse effects. 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 iron oxide 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".

Interactive effects:

Not available

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity:

Ingredient	Test	Result	Species	Exp.
Triiron tetraoxide [Fe ₃ O ₄] CAS: 1309-38-2/ 1317-61-9	EU C.2	Acute EC0>10000 mg/l	Daphnia magna	48 h
	OECD 209	Acute EC50>10000 mg/l	Bacteria- adaptado de lodo activo	3 h
	OECD 203	Acute LC0>100000 mg/l	Danio Rerio	96 h

12.2 Persistence and degradability

Not available

12.3 Bioaccumulative potential

Not available

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12.4 Mobility in soil

Not available

12.5 Results of PBT and vPvB assessment

Not available. This mixture does not contain any substances that are assessed to be PBT or a vPvB.

12.6 Other adverse effects

The accidental spill of this product can cause visual impact due to the intense black color.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Product

Methods of disposal:

Examine possibilities for re-utilization. Product residues and uncleaned empty containers should be packaged, sealed, labelled, and disposed of or recycled according to relevant national and local regulations. Where large quantities are concerned, consult the supplier. When uncleaned empty containers are passed on, the recipient must be warned of any possible hazard that may be caused by residues. For disposal within the EC, the appropriate code according to the European Waste List (EWL) should be used. It is among the tasks of the polluter to assign the waste to waste codes specific to industrial sectors and processes according to the European Waste List (EWL).

Hazardous waste

Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Packaging

Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible

Special precautions

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	-	-	-	-
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)/marks	-	-	-	-
14.4 Packaging group	-	-	-	-
14.5 Enviromental hazards	No	No	No	No
14.6 Special precautions for user	Not regulated	Not regulated	Not regulated	Not regulated

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

Not available.

Hazard notes: Not dangerous cargo. Keep separated from foodstuffs.

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SECTION 15 - REGULATORY INFORMATION

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

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*.

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.

-**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.

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.

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.

15.2 Chemical Safety Assessment:

Not applicable.

SECTION 16 - OTHER INFORMATION

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