

## SECTION 1: Identification of the substance/mixture and of the company/undertaking.

### 1.1. Product identifier

Product form : Substance

Product name : Red Iron Oxide

EC no : 215-275-4

CAS No. : 1317-60-8

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

Synonyms : Diiron trioxide, Hematite

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

#### 1.2.1. Relevant identified uses

Use of the substance/preparation:

Substance used as such, in formulation or in formulation of products such as:

- Glaze colours
- Ceramic colours
- Brick stains
- Concrete/Cementitious applications
- Paints
- Fertilisers
- Glass

#### 1.2.2. Uses advised against

- None

Full text of use descriptors: see section 16.

### 1.3. Details of the supplier of the safety data sheet

Simba Materials Limited t/a CTM Potters Supplies

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EX5 1EL

T + 44 (0)1395 233077 - F +44 (0)1395 233905

### 1.4. Emergency telephone number

T +44 (0)1709 770801 (Office hours only)

[doncaster@ctmpotterssupplies.co.uk](mailto:doncaster@ctmpotterssupplies.co.uk)

## SECTION 2: Hazards identification.

### 2.1. Classification of the substance or mixture

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

Not classified

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

Not classified

#### GHS classification

Physical and chemical hazards: None known

Human health: Specific target organ toxicity Repeated exposure – Hazard category 2 (lung)

Environment: None known

Full text of H-phrases: see section 16

Full text of R-phrases: see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

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

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Signal word (CLP): WARNING

#### Hazard statements (CLP) :

H373:- May cause damage to lung through prolonged or repeated exposure by inhalation.

#### Precautionary statements (CLP):

P101:- If medical advice is needed have product container or label at hand.

P102:- Keep out of reach of children.

P103:- Read label before use.

P260:- Do not breathe dust.

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

P501:- Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3. Other hazards

#### 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 requires 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 Organisations.

**Hematite (CAS 1317-60-8):** Prolonged inhalation of natural (hematite) or synthetic ( $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>, 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 lungfunction 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 ( $\alpha$ -SiO<sub>2</sub> = 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](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,  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>

Constituents	Chemical formula	CAS No.	EINECS No.	Weight (%)
Hematite	$\alpha$ -Fe <sub>2</sub> O <sub>3</sub>	1317-60-8	215-275-4	78-98
Dolomite	Ca(Mg,Fe)(CO <sub>3</sub> ) <sub>2</sub>	16389-88-1	240-440-2	≤11
Mica -group minerals	KAl <sub>2</sub> [(Si <sub>3</sub> Al)O <sub>10</sub> ](OH) <sub>2</sub>	12001-26-2	310-127-6**	≤10
Quartz	$\alpha$ -SiO <sub>2</sub>	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.

#### 4.1. Description of first aid measures

**Inhalation:** Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

**Ingestion:** Rinse mouth thoroughly. Get medical attention if any discomfort continues.

**Skin contact:** Wash skin with soap and water. Get medical attention if irritation persists after washing.

**Eye contact:** Make sure to remove any contact lenses from the eyes before rinsing. Rinse eye with water immediately. Get medical attention if any discomfort continues.

#### 4.2. Most important symptoms and effects, both acute and delayed

**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: Firefighting measures.

### 5.1. Extinguishing media

**Suitable extinguishing media:** Water spray (fog), foam, dry chemical or CO<sub>2</sub>.

**Unsuitable extinguishing media:** Avoid use of high pressure water, which could generate dust.

### 5.2. Special hazards arising from the substance or mixture

**Fire hazard:** Not flammable.

**Explosion hazard:** No explosive properties known.

**Reactivity:** Stable under normal conditions of handling and storage.

### 5.3. Advice for firefighters

**Protection during firefighting:** 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

**General measures:** Keep public away from danger area. See section 8.2.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and soil. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Sweep or shovel spills into appropriate container for disposal. Avoid dust production.

### 6.4. Reference to other sections

See section 8 and 13 for more information.

**SECTION 7: Handling and storage.****7.1. Precautions for safe handling**

**Precautions for safe handling:** Do not breathe dust. Wash hands plentifully and other exposed areas with water after handling. Remove contaminated clothing and shoes. Wash clothing before re-using.

**Packagings:** Even those that have been emptied, will retain product residue. Always obey safety warnings and handle empty packagings as if they were full. Avoid all contact with this substance.

**Hygiene measures:** When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Remove contaminated clothing and shoes.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage conditions:** Store in dry, cool, well-ventilated area. Keep away from food, drink and animal feeding stuffs.

**7.3. Specific end use(s)**

The identified uses for this product are detailed in section 1.2

**SECTION 8: Exposure controls/personal protection.****8.1. Control parameters****Occupational exposure limits.**

Constituent	United Kingdom OEL
Hematite (1317-60-8) $\alpha\text{-Fe}_2\text{O}_3$	LTEL: 10mg/m <sup>3</sup> - Total dust LTEL: 4mg/m <sup>3</sup> - Respirable dust STEL 10mg/m <sup>3</sup> - 15mins
Quartz (14808-60-7) $\alpha\text{-SiO}_2$	TWA: 0.1mg/m <sup>3</sup> STEL: 0.3mg/m <sup>3</sup> (calculated)
Mica (12001-26-2) $\text{KA}_2[(\text{Si}_3\text{Al})\text{O}_{10}](\text{OH})_2$	TWA: 10mg/m <sup>3</sup> - Total dust TWA: 0.8mg/m <sup>3</sup> - Respirable dust

OEL: Occupational exposure limit.

**Ingredients comments:**

Dust contains respirable silica. Prolonged and/or massive inhalation of respirable silica dust may cause lung fibrosis. Commonly referred to as silicosis. Principal symptoms of silicosis are cough and breathlessness. Occupational exposure to respirable dust should be monitored and controlled. The product should be handled using methods and techniques that minimise or eliminate dust generation. The product contains less than 1% w/w RCS (respirable crystalline silica) as determined by the SWERF method. The respirable crystalline silica content can be measured using the "Size-Weighted Respirable Fraction – SWERF" method. All details about the SWERF method are available at [www.crystallinesilica.eu](http://www.crystallinesilica.eu)

## 8.2. Exposure controls

**Appropriate engineering controls:** Use as far as possible in a closed system. Provide a regular control of the atmosphere. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Local exhaust and general ventilation must be adequate to meet exposure standards. Please refer to the annex (exposure scenarios).

**Hand protection:** Use gloves resistant to chemical products corresponding to EN 374:3. Take advice to gloves' manufacturer.

**Eye protection:** Wear safety glasses with side shields according EN 166.

**Skin and body protection:** Wear closed protective clothing.

**Respiratory protection:** Use respiratory protection mask according to EN 140 or EN 405 with filter type P3 according to EN 143:2000 or FFP3 according to EN 149:2001.

**Environmental exposure controls:** Avoid release to the environment.

## SECTION 9: Physical and chemical; properties.

Physical state	Powder.
Colour	Reddish brown
Odour	odourless.
Odour threshold	Not applicable
pH	6.7 – 7.3
Relative evaporation rate (butylacetate=1)	No data available
Melting point	No data available
Freezing point	No data available
Initial Boiling point	>2,000°C
Flash point	Not flammable
Self ignition temperature	Not applicable
Decomposition temperature	No data available
Flammability (solid, gas)	Not flammable
Vapour pressure	0.0mm Hg at 20°C
Relative vapour density at 20 °C	No data available
Relative density	4.5 – 5.0
Bulk Density	0.8– 1.2
Solubility	Negligible
Log Pow	Not applicable
Log Kow	Not applicable
Viscosity, kinematic	Not applicable
Viscosity, dynamic	Not applicable
Explosive properties	Not explosive.
Oxidising properties	No data available
Explosive limits	Not applicable

## 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity.

### 10.1. Reactivity

No specific reactivity hazards associated with this product.

### 10.2. Chemical stability

Stable under normal conditions of handling and storage.

### 10.3. Possibility of hazardous reactions

Not relevant.

### 10.4. Conditions to avoid

No specific conditions are likely to result in a hazardous situation.

### 10.5. Incompatible materials

Calcium hypochlorite, carbon monoxide, hydrogen peroxide, hydrazine, fluorine, bromine pentafluoride, chlorine trifluoride, oxygen difluoride and strong acids (hydrofluoric, nitric)

### 10.6. Hazardous decomposition products

None under normal circumstances. May evolve toxic fumes (iron oxides) when heated at 1565°C

## SECTION 11: Toxicological information.

### 11.1. Information on toxicological effects

**LD50 Rat (Oral):** - >5,000mg/kg

**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".

## SECTION 12: Ecological information.

**Ecotoxicity:** Not regarded as dangerous for the environment.

### 12.1. Acute fish 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.

**LC50(fish):** - >1,000mg/kg

### 12.2. Persistence and degradability

This product is not readily biodegradable.

### 12.3. Bioaccumulative potential

The product is not bioaccumulating.

### 12.4. Mobility in soil

Accidental spillage of these dusty products 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, all the constituents of these products are common minerals of soils.

### 12.5. Results of PBT and vPvB assessment

This substance/mixture does not meet the PBT or vPvB criteria of REACH, annex XIII.

### 12.6. Other adverse effects

None known.

## SECTION 13: Disposal considerations.

### 13.1. Waste treatment methods

**Waste treatment methods:** Dispose of this material and residues in accordance with local authority requirements.

**Additional information:** Empty packaging can have residues or dusts and are subject to proper waste disposal, as above.

**Ecology - waste materials:** See the european waste catalogue.



## SECTION 14: Transport information.

### 14.1. UN number

The product is not covered by international regulation on transport of dangerous goods (IMDG, IATA, ADR/RID).

### 14.2. UN proper shipping name

Not classified for transportation.

### 14.3. Transport hazard class(es)

Not classified for transportation.

### 14.4. Packing group

Not classified for transportation.

### 14.5. Environmental hazards

Other information: No environmental hazards known with this product.

### 14.6. Special precautions for user

Not classified for transportation.

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

Not applicable.

## SECTION 15: Regulatory information.

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

#### 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.

**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.

**SECTION 16: Other information.****Abbreviations and acronyms:**

ADN: European Agreement concerning international carriage of Dangerous goods by Inland waterways

ADR: European Agreement concerning international carriage of Dangerous goods by Road

AF: Assessment factor

BCF: Bioconcentration factor

Bw: Body weight

CAS: Chemical Abstracts Service

CLP: Classification, labelling, packaging

CSR: Chemical Safety Report

DMEL: Derived maximum effect level

DNEL: Derivative No effect Level

EC: European Community

ELV: Emission limit values

EN: European Norm

EUH: European Hazard Statement

EWC: European Waste catalogue

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

IMDG: International Maritime Dangerous Goods

LC50: Median lethal concentration

LD50: Median lethal dose

NOAEL: No-observed-adverse-effect-level

NOEC: No observed effect concentration

NOEL: No observed effect level

OEL: Operator exposure level

PBT: Persistent, bioaccumulative, Toxic

PEC: Predicted effect level

PNEC: Predicted No effect Concentration

REACH: Registration, evaluation and autorisation of chemicals

RID: Regulations concerning the international carriage of dangerous goods by rail

STEL: Short Term Exposure Limit

TWA: Time weighted average

vPvB: Very persistent, very bioaccumulative.

**Training advice:** None.

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

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