

Piiox[®] K110M

This product is not classified as dangerous. A safety data sheet is not required for this product under Article 31 of REACH. This SDS has been created on a voluntary basis.

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: Piiox K110M
REACH Substance Name: Diiron trioxide
EG-No.: 215-168-2
CAS-No.: 1309-37-1
REACH Registration number: 01-2119457614-35-0084
Other names: C.I. Pigment red 101 (77491), Diiron trioxide Fe₂O₃

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

Not known
Suitable uses : Colorants (pigments and dyestuffs), inorganic

1.3 Details of the supplier of the safety data sheet supplier

PIGMENT INTERNATIONAL GmbH & Co. KG
Karl-Winnacker-Str. 2-4
D-36396 Steinau, Germany

Phone / Telefax / E-Mail

+49 6663-96070 / +49 6663-960750 / em@pigment-international.com

1.4 Emergency telephone

+49 6663-96070 (office times), +49 30-30686700 (24h)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

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

Not a hazardous substance or mixture.

Classification according to Directive 67/548/EEC [DSD]

Not classified.

2.2 Label elements (REGULATION (EC) No 1272/2008)

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

2.3 Other hazards

Other hazards which do not result in classification : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 3: Composition/information on ingredients

3.1 Product definition (REACH) : Mono-constituent substance

Diiron trioxide Fe₂O₃

This substance/ mixture contains nanoforms

Within the present knowledge of the supplier, this product does not contain any hazardous ingredients in quantities requiring reporting in this section, in accordance with EU or national regulations.

This substance/ mixture contains nanoforms**Component: Fe₂O₃ particle characteristics**

Particle Size Distribution : D10 = 35 nm ± 15 nm

D50 = 85 nm ± 15 nm

D90 = 160 nm ± 40 nm

Type of distribution: number distribution

Specific surface area : 14 m²/cm³ ± 6 m²/cm³

Measurement technique: Brunauer, Emmett and Teller (BET) method using Nitrogen

Shape: spheres

Surface treatment /Coatings: no

Section 4: First aid measures**4.1 Description of first aid measures****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. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

Wash off with plenty of water. Continue to rinse for at least 10 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. If symptoms persist, call a physician.

Eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Ingestion

Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of any immediate medical attention and special treatment needed

See Section 11 for more detailed information on health effects and symptoms.

Section 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing

Media : In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing

Media : None known.

5.2 Special hazards arising from the substance or mixture

No specific fire or explosion hazard.

No hazardous combustion products.

5.3 Advice for fire fighters

No special precautions for fire fighters. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) 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).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Move containers from spill area. Stop leak if safe to do so. Dispose of wastes in an approved waste disposal facility.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

Section 7: Handling and storage**7.1 Precautions for safe handling**

Advice on safe handling : For personal protection see section 8.
Avoid contact with skin and eyes.
Provide sufficient air exchange and/or exhaust in work rooms.
In case of insufficient ventilation, wear suitable respiratory equipment.
Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : General industrial hygiene practice.
When using do not eat, drink or smoke. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing before reusing.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep containers tightly closed in a dry, cool and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : No materials to be especially mentioned.

Storage class (TRGS 510) : 13, Non Combustible Solids

Further information on storage stability : Keep in a dry place. No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Not available.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Exposure limit values : Contains no substances with occupational exposure limit values.

Derived effect levels

Ingredient name	Type	Exposure	Value	Population	Effects
Piiprox K110M	DNEL DNEL	Long term Inhalation	10 mg/m ³	Workers	Systemic
		Long term Inhalation	10 mg/m ³	Workers	Local

8.2 Exposure controls

8.2.1 Technical measures

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

8.2.2 Personal protection measures

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If operating conditions cause high dust concentrations to be produced, use dust goggles. Recommended: safety glasses with side-shields

Skin protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Recommended: Dust-protection mask

Hand protection

Recommended: gloves

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.3 Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Water : The product should not be allowed to enter drains, water courses or the soil.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	solid (powder)
Colour:	red
Odour:	odorless
pH:	5 to 7 (5% aqueous suspension)
Melting point:	> 1000°C
Vapour pressure:	not available.
Density:	5,25 kg/l at 20°C
Solubility :	< 0,000001 g/l (Wasser)
Decomposition temperature :	No data available
Boiling point/boiling range :	No data available
Flash point :	No data available
Evaporation rate :	No data available
Flammability (solid, gas)	No data available
Upper explosion limit :	No data available
Lower explosion limit :	No data available
Vapour pressure :	No data available
Relative vapour density :	No data available
Partition coefficient: n-octanol/water :	No data available
Ignition temperature :	No data available
Viscosity:	No data available

9.2 Other information

No additional information.

Section 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No specific data.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11: Toxicological information

Conform to regulation (EC) No. 1907/2006 (REACH)

Product name: Piiox K110M

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11.1 Toxicological information**Potential acute health effects****Eye contact:** Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.**Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure	Test
Piiox K110M	LD50 Oral	rat	> 5.000 mg/kg	-	
	LC50 Inhalation Dusts and mists	rat	> 210 mg/m ³	14 d	

Irritation/Corrosion**Skin** : Non-irritating. *Test results of an analogous product**Eyes** : Non-irritating. *Test results of an analogous product**Sensitiser**

Product/ingredient name	Route of exposure	Species	Result	Test description
Piiox K110M	Skin	Guinea pig	Not sensitizing	-

Potential chronic health effects Mutagenicity

Product/ingredient name	Test	Experiment	Result
Piiox K110M	Ames Test	Experiment: In vitro Subject: Bacteria	Negativ

Chronic effects : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.**Germ cell mutagenicity** : Not classified based on available information.**Carcinogenicity** : Not classified based on available information.**Reproductive toxicity** : Not classified based on available information.**STOT - single exposure** : Not classified based on available information.**STOT - repeated exposure** : Not classified based on available information.**Aspiration toxicity** : Not classified based on available information.**11.2 Information on other hazards**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 12: Ecological information**12.1 Toxicity**

Product/ingredient name	Test	Result	Species	Exposure
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Conform to regulation (EC) No. 1907/2006 (REACH)

Product name: Piirox K110M

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Piirox K110M	Acute EC50 >100 mg/l	Daphnia-Daphnia magna	48 hours
	LC50 >10.000 mg/l	Fish - Danio rerio	96 hours
	EC50 >10.000 mg/l	activated sludge	3 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition

coefficient (KOC)

: Not available.

Mobility

: Not available.

12.5 Results of PBT and vPvB assessment

: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Additional ecological information : Ecotoxicological data are not available.
No known significant effects or critical hazards.

12.7 Endocrine disrupting properties

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal

Examine possibilities for re-utilisation. Product residues and uncleaned empty containers should be packaged, sealed, labeled, 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

Conform to regulation (EC) No. 1907/2006 (REACH)

Product name: Pierox K110M

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Methods of disposal

The generation of waste should be avoided or minimized 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/ADNR	IMDG	IATA
14.1 UN number	-----	-----	-----	-----
14.2 UN proper shipping name	-----	-----	-----	-----
14.3 Transport hazard class(es)/ Marks	-----	-----	-----	-----
14.4 Packing group	-----	-----	-----	-----
14.5 Environmental hazards	No.	No.	No.	No.
14.6 Special precautions for user/Additional information	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.

Section 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

: Not applicable

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors

: Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

: This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast)

: Not applicable

Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors.

: Neither banned nor restricted

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

: Not applicable

Conform to regulation (EC) No. 1907/2006 (REACH)

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REACH - List of substances subject to authorisation
(Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
:Not applicable

Water hazard class (Germany) : nwg not water endangering
Code Number: 800
Classification according to AwSV, Annex 1 (2)

15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance.

Section 16: Other information

Abbreviations and acronyms:

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

History

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Version 2.0

Notice to reader

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet and its Annex [if required according to Regulation (EC) 1907/2006 (REACH)] is to describe the products in terms of their safety requirements. The given details do not imply any guarantee concerning the composition, properties or performance.
