

SolidFlow PBk11 Black Iron Oxide

Product Safety Information Sheet

A safety data sheet is not required for this product under Article 31 of REACH. This Product Safety Information Sheet has been created on a voluntary basis
Issue date: 10/10/2024 Revision date: 3/6/2026 Version: 2.0

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

1.1. Product identifier

Product form : Mixture
Product name : SolidFlow PBk11 Black Iron Oxide
Product code : SF 910

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Synthetic iron oxide mixed with anionic and non-ionic surfactants.

1.2.2. Uses advised against

Restrictions on use : Other uses are not expected

1.3. Details of the supplier of product safety information sheet

SIOF S.p.A.
Via G. Garibaldi 62
15068 Pozzolo Formigaro, Italy, AL
solidflow.it
E-mail address of competent person responsible for the SDS : info@solidflow.it

1.4. Emergency telephone number

Emergency number : +39 0143417781 Opening hours 8am-12pm / 1pm-5pm

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

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

No labelling applicable

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Name	Product identifier	Conc. % w/w	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Triiron tetraoxide	CAS-No.: 1317-61-9 EC-No.: 215-277-5 REACH-no: 01-2119457646-28	< 100	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: If you feel unwell, seek medical advice.
Self protection of the first-aiders	: Even though no specific hazards are defined, first-aiders should wear eye protection, gloves and disposable half mask. Consider additional protection if repeated or prolonged exposition is likely.

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

Symptoms/effects after inhalation	: None under normal conditions. Dust of the product, if present, may cause respiratory irritation after excessive inhalation exposure.
Symptoms/effects after skin contact	: None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.
Symptoms/effects after eye contact	: None under normal conditions. Dust from this product may cause eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions	: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up : Mechanically recover the product.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer also to sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Keep cool. Protect from sunlight.
Packaging materials : Always store product in container of same material as original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Triiron tetraoxide (1317-61-9)

Poland - Occupational Exposure Limits

Local name	Tetratlenek trżelaza
NDS (OEL TWA)	5 mg/m³ w przeliczeniu na Fe – frakcja wdychalna 2.5 mg/m³ w przeliczeniu na Fe – frakcja wdychalna

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Triiron tetraoxide (1317-61-9)	
NDSch (OEL STEL)	10 mg/m ³ w przeliczeniu na Fe – frakcja wdychalna 5 mg/m ³ w przeliczeniu na Fe – frakcja wdychalna
Remark	Frakcja wdychalna – frakcja aerozolu wnikać przez nos i usta, która stwarza zagrożenie dla zdrowia po zdeponowaniu w drogach oddechowych. Frakcja respirabilna – frakcja aerozolu wnikać do dróg oddechowych, która stwarza zagrożenie dla zdrowia po zdeponowaniu w obszarze wymiany gazowej.
Regulatory reference	Dz. U. 2024 poz. 1017 wraz z późn. zm.

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment:

Wear recommended personal protective equipment.

8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Colour : Black.

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Appearance	: Granules.
Odour	: characteristic.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not applicable
Boiling point	: Not available
Flammability	: Non flammable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 80 °C (pigment)
pH	: Not available
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Water: Insoluble
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Density in bulk: 1,2 - 1,4 kg/l
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)



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Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

LD50 oral rat > 2000 mg/kg

LC50 Inhalation - Rat > 640 mg/m³ no death; OECD 403 study

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information Not irritating to rabbit skin (study in accordance with OECD Guideline 404).

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information Not irritating to the eye of rabbit (OECD 405).

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information Not sensitizing to guinea pig in an in vivo study (non LLNA).

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information Non genotoxic. (OECD 471, OECD 473, OECD 474)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information The substance did not show carcinogenic effects in the studies performed.

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information The toxicity to reproduction is not addressed by substance-specific information, but instead by a weight of evidence approach based on collected information for all substances of the iron oxides category. Source information is obtained from studies with soluble iron substances, which constitutes an intrinsic conservatism. The assessment of the effects in humans of iron oxides is related to the assumption that iron oxides are of very low solubility in artificial body fluids and of very low systemic bioavailability.

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)

Additional information Based on the information from a 90-day repeated dose oral toxicity study in rats (according to OECD 408, GLP) it is concluded that the Fe₃O₄ does not show any adverse effects up to the highest dose level of 1000 mg/kg bw/day.
For dermal toxicity no reliable repeated dose toxicity studies are available for the iron oxide category.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The mixture does not contain substances included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substances identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1%.

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11.2.2. Other information

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

Triiron tetraoxide (1317-61-9)	
LC50 - Fish [1]	> 100 g/l
EC50 - Crustacea [1]	> 100 mg/l Daphnia magna (Water flea)
EC50 72h - Algae [1]	> 20 mg/l Raphidocelis subcapitata
NOEC (chronic)	≥ 20 mg/l Daphnia magna (Water flea)

12.2. Persistence and degradability

SolidFlow PBk11 Black Iron Oxide	
Persistence and degradability	No data are available on the mixture as such.
Triiron tetraoxide (1317-61-9)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

Triiron tetraoxide (1317-61-9)	
Bioaccumulative potential	Low bioaccumulation potential.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

12.7. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Comply with applicable regulations for solid waste disposal. Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: The waste of the product should be considered as hazardous as the product itself, with the likelihood of impacting the environment in the same way. Consider the handling and disposal of the waste as defined by the product itself.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

14.6. Special precautions for user

Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Rail transport

Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Other information, restriction and prohibition regulations : Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 and all its amendments and modifications.

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (2024/590)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 2024/590 on substances that deplete the ozone layer)

Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

Explosives Precursors Regulation (EU 2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (EC 273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).

Water hazard class (WGK) : WGK nwg, Non-hazardous to water (Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV)).

Major Accidents Ordinance (12. BImSchV) : Is not listed in the Major Accidents Ordinance (12. BImSchV)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

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Indication of changes:

Edition n. 1.0, dated 10/10/2024 .

Edition n. 1.0, dated 3/6/2026 : Toxicological data update.

Abbreviations and acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists
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Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstracts Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet



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Abbreviations and acronyms:

STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Data sources : SDS Supplier. ECHA database.

Training advice : Follow National requirements to ensure protection of human health and the environment.

This document is intended to provide guidance for the proper and safe handling of this product by qualified personnel or those working under the supervision of personnel experienced in handling chemicals. The product should not be used for purposes other than those listed in Section 1 unless adequate written information on how to handle the material has been received.

The person responsible for this document cannot provide warnings about all hazards arising from use or interaction with other chemicals or materials. The user is responsible for the safe use of the product, its suitability for its intended use, and its proper disposal. The information provided below is not intended to be a representation or warranty, either express or implied, of merchantability, fitness for a particular purpose, quality, or any other nature. The information contained in this SDS complies with the provisions of Regulation (EU) 2020/878.