

SAFETY DATA SHEET BISMUTH VANADATE PREPARATION

according to Regulation (EC) No. 1907/2006

SolidFlow **PY184 Bismuth Vanadate Yellow** - Product code **SF 140-X**

Date of Revision: October 10th 2024 Revision N:1 Country / Language: ITA / EN

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

1.1. Product identifier

| | |
|----------------------|--------------------------------------|
| Trade name: | Bismuth vanadate pigment preparation |
| Product code: | SF 140-X |
| CAS number: | 14059-33-7 |
| INDEX number: | CI Pigment Yellow 184 |
| EEC (EINECS) number: | 273-898-0 |
| Structural Formula: | BiVO_4 |

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

| | |
|-------------------------------|---|
| Use of the Substance/Mixture: | Synthetic pigment mixed with anionic and non-ionic surfactants. |
|-------------------------------|---|

1.3. Details of the supplier of the safety data sheet

| | |
|----------|--|
| Company: | SIOF S.p.A. Via Garibaldi 62 15068 - Pozzolo Formigaro (AL) Italy Tel: +39 0143417781 VAT nr.: IT 0016470069 Production sites: 1) Pozzolo Formigaro (AL) - Via Garibaldi 62 2) Verona - Via Pisano 53/A |
|----------|--|

Email address of the competent person:

siof@siof.it

1.4. Emergency telephone number

| | |
|-----------------------------|----------------|
| Emergency telephone number: | +39 0143417781 |
|-----------------------------|----------------|

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008):

Not a hazardous substance or mixture.

2.2. Label elements

Labelling (REGULATION (EC) No 1272/2008):

Non hazardous substance/mixture.

Danger Pictograms: Not applicable.

Warnings: No warning instructions.

Danger Indication: Not classified: there are no significant effects noted.

2.3. Other hazards

The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of the Regulation (EC) No. 1907/2006.



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SECTION 3: Composition/information on ingredients

3.1 Substances

Components:

| | |
|-----------------------------|---|
| Name: | Bismuth-vanadium tetraoxide. |
| EEC(EINECS) number: | 273-898-0 |
| CAS number: | 14059-33-7 |
| | Respirable fraction, particle size < 10 µm. As a precautionary measure, the D10 of the pigmentary preparation may be considered to approach the size of the primary particle. The particles with size < 10 µm pertain to the pigment as a single component. |

Dangerous substances

| | | |
|--|--|-----|
| CAS: 14059-33-7 EINECS: 237-989-01 REACH: 01-2119486965-17 | C.I. Pigment Yellow 184, respirable fraction, particle size < 10 µm  STOT RE 2, H373 | <1% |
|--|--|-----|

Other components:

| | |
|--------------|----------------------------------|
| Name: | Anionic and non-ionic additives. |
|--------------|----------------------------------|

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|------------------------------|---|
| General advice: | Symptoms of poisoning can appear after many hours, which is why medical supervision is necessary for 48 hours following the accident. No specific measures are necessary. |
| Inhalation: | Move to a well-ventilated area. In case of problems, consult a physician. |
| Skin contact: | Generally the product is not irritating to the skin. |
| Eye contact: | Wash with running water for a few minutes keeping the eyelids wide open. |
| In case of ingestion: | Rinse mouth with water and consult physician. |

4.2 Most important symptoms and effects, both acute and delayed

No other information available.

4.3 Indication of any immediate medical attention and special treatment needed

No other information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

| | |
|--|-----------------------------|
| Suitable extinguishing media: | Extinguishing powder, foam. |
| Unsuitable extinguishing media: | Strong water jet. |

5.2 Special hazards arising from the substance or mixture

No other information available.

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5.3 Advice for firefighters

Protective equipment:

Wear self-contained respiratory protective device.

Further information:

Contaminated extinguishing water and debris should be disposed of according to local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid formation of dust, wear protective clothing.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

6.3 Methods and material for containment and cleaning up

Dispose of contaminated material according to Section 13.

6.4 Reference to other sections

For information on safe handling, see chapter 7.

For information relating to personal protective equipment, see chapter 8.

For disposal information, see chapter 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling:

No special measures are required.

Instructions in case of fire and explosion:

No special measures are required.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions:

Store in tightly sealed containers in a dry room.

Requirements for storage areas and containers:

No special measures necessary.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Exposure controls

Components whose limit values must be kept under control in working environments:

Not applicable.

Further information:

The lists valid on the date of compilation were used as a basis.

8.2 Exposure controls

Adequate technical controls:

No additional data, see point 7.

Personal protective measures, such as personal protective equipment

General protective and workplace hygiene rules:

Keep away from food, beverages, and fodder.



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| | |
|---|---|
| Respiratory protection: | In short and minimal exposures, use a mask; in more intense and prolonged exposures, wear a self-contained breathing apparatus. |
| Hand protection: | Glove material must be impermeable and stable against the product/substance/formulation. Due to the lack of tests, no specific glove material can be recommended for handling the product/formulation/mixture of chemical substances. Choice of glove material should consider breakthrough times, permeation rates, and degradation. |
| Glove material: | The choice of suitable gloves depends not only on the material but also on other quality characteristics that vary between manufacturers. Since the product consists of a formulation of multiple substances, the stability of glove materials cannot be predicted in advance and must be tested prior to use. |
| Breakthrough time of glove material: | Request the exact breakthrough time from the glove supplier, and ensure compliance. |
| Eye/face protection: | Not required. |
| Protective suit: | Protective suit. |

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|-----------------------------------|-----------------------------------|
| Appearance: | Granules |
| Physical state: | Solid |
| Colour: | Yellow |
| Odour: | Characteristic |
| Solubility: | Insoluble in water. It disperses. |
| Density: | 5,4 – 6 kg/l (pigment) |
| Bulk density: | 0.8 - 1.2 kg/l |
| Decomposition temperature: | No data available |
| Flammability: | Not applicable |

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None if handled and stored according to specifications.

10.4 Conditions to avoid

No other information available.

10.5 Incompatible materials

No other information available.

10.6 Hazardous decomposition products

None if stored and handled according to specifications.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

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

CAS: 14059-33-7 C.I. Pigmento yellow 184, respirable fraction, particle size < 10 µm

| | |
|------------------------|--------------|
| LD50/oral/rat | > 5000 mg/kg |
| L50/4 h/inhalation/rat | > 5,1 mg/l |

Skin corrosion/irritation:

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

Serious eye damage/eye irritation:

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

Respiratory or skin sensitization:

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

Germ cell mutagenicity:

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

Carcinogenicity:

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

Reproductive toxicity:

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

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.)

Aspiration hazard:

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

Other information:

Properties of interference with the endocrine: None of the components is contained.

SECTION 12: Ecological information

12.1 Aquatic Toxicity

Aquatic Toxicity:

CAS 14059-33-7 A: Respirable fraction Pigment Yellow 184 (bismuth vanadate, particle size in µm: <10).

Acute fish toxicity LC50 >10000 mg/l 96 h Danio rerio (reported as brachydanio rerio).

Acute algae toxicity ErC50 >100 mg/l Desmodesmus subspicatus.

Acute crustacea toxicity EC50 >100 mg/l 48 h Daphnia magna.

12.2 Persistence and degradability

The methods for determining the biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No indication of bioaccumulation potential.

12.4 Mobility in soil

Mobility/rating: low.

12.5 Results of PBT and vPvB assessment

The product is inorganic.

This substance does not meet the criteria for classification as PBT or vPvB.

• PBT: not applicable

• vPvB: not applicable.

12.6 Endocrine Disrupting Properties

The product does not contain substances with properties harmful to the endocrine system.

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12.7 Other adverse effects

Other adverse effects:

Observations:

Harmful to fish

Further ecological effects:

Hazard for waters class 1 (D) (Self-classification): slightly dangerous.

Do not enter undiluted or in large quantities into groundwater, watercourses or sewers.

Note on the classification in water hazard classes (WGK) carried out and published by the German Federal Environment Agency (UBA) (Rigoletta database).

In general, the substances clearly characterised with EINECS No. 237-898-0 or CAS No. 14059-33-7 and designated with the IUPAC name bismuth vanadium tetraoxide are assigned to the vanadium compounds in the "Rigoletto" database of the German Federal Environment Agency.

According to this, the UBA classifies all vanadium compounds as class 3 water pollutants unless their water solubility is < 4 µg vanadium/l.

The water solubility of bismuth vanadium tetraoxide was determined by an accredited laboratory using test methods prescribed by the OECD. The solubilities obtained were in all cases well below the specified limit of 4 µg/l vanadium.

For this reason, bismuth vanadium tetraoxide cannot be assigned to the general classification that is mandatory for vanadium compounds.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Uncleaned packaging:

Disposal in accordance with administrative provisions.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / AND

14.1 UN number

ADR, IMDG, IATA:

Not applicable.

14.2 UN proper shipping name

ADR, IMDG, IATA:

Not applicable.

Proper Shipping Name (RID):

Not applicable.

14.3 Transport hazard class(es)

ADR, AND, IMDG, IATA class:

Not applicable.

14.4 Packing group

ADR, IMDG, IATA:

Not applicable.

14.5 Environmental hazards

Not applicable.

14.6 Special precautions for user

Not applicable.



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

Annex II of MARPOL 73/78: Not applicable.

Code: IBC: Not applicable.

SECTION 15: Regulatory information

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

EU-Regulations: No REACH Annex XVII restrictions.

SECTION 16: Other information

Issued by: Responsible for Health, Safety, and Environment

Date: October 10th, 2024

Revision: 1

More information:

This safety data sheet is drawn up in compliance with in force the regulations in classification and labeling matter on the revision date indicated in the header. The information provided on this SAFETY DATA SHEET corresponds to the state of our knowledge and knowledge our experience of the product, and it is not exhaustive.

It applies to the product as is, compliant with specifications. In case of combinations or mixtures, make sure that no new danger can arise. In no case does it exempt the user of the product from complying with all legislative provisions, administrative and regulatory issues relating to the product, hygiene and safety at work.