

Safety Data Sheet

BioSphere. PP, PS, PET, PE Additive

Revision date 1/2016
Version 1.2

<http://www.biosphereplastic.com>

Proprietary information

SECTION 1: Identification of the mixture

1.1. Product identifier

BioSphere Plastic 201

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

Recommended use: for industrial processing only

1.3. Details of the supplier of the safety data sheet

Company:
BioSphere Plastic
Portland, OR

1.4. Emergency telephone number

Telephone: 1-503-530-8674

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

No need for classification according to GHS criteria for this product.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

The product does not require a hazard warning label in accordance with GHS criteria.

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical Family: Preparation based on: Aliphatic-Aromatic ester, modified, Polylactide, Organoleptic, Monosaccharides, Aldohehexose

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:

After inhalation of decomposition products, remove the affected person to a source of fresh air and keep calm. Provide medical aid. If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

On skin contact:

Areas affected by molten material should be quickly placed under cold running water.

Burns caused by molten material require hospital treatment.

On contact with eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

On ingestion:

Rinse mouth and then drink plenty of water. If difficulties occur: Seek medical attention. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

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

Symptoms: No significant reaction of the human body to the product known.

Hazards: No hazard is expected under intended use and appropriate handling.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray, foam, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

carbon monoxide, Carbon dioxide, tetrahydrofuran, fumes/smoke, carbon black, harmful vapours Formation of further decomposition and oxidation products depends upon the fire conditions. Under special fire conditions traces of other toxic substances are possible.

5.3. Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:

The degree of risk is governed by the burning substance and the fire conditions. In case of combustion evolution of toxic gases/vapours possible. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6: Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation. Sources of ignition should be kept well clear.

6.2. Environmental precautions

No special precautions necessary.

6.3. Methods and material for containment and cleaning up

Sweep/shovel up. Avoid raising dust. Ensure adequate ventilation. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Processing machines must be fitted with local exhaust ventilation. When working on exhaust systems special safety precautions must be taken, because dangerous substances can accumulate in the residue of the exhaust system. Avoid the formation and deposition of dust. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

Avoid dust formation. Dust can form an explosive mixture with air. Provide exhaust ventilation. When the product is ground (chopped), dust explosion regulations should be noted.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Protect against moisture. Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame. The product must be stored according to the requirements of Regulation (EC) No 2023/2006. Contamination with other substances must be avoided. Storage together with other substances, especially hazardous substances, must be avoided.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Breathing protection if dusts are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1 or FFP1)

Hand protection:

Use additional heat protection gloves when handling hot molten masses (EN 407), e.g. of textile or leather.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of

splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Avoid contact of molten material with skin. Avoid inhalation of dusts/mists/vapours. Eye wash fountains and safety showers must be easily accessible. Handle in accordance with good industrial hygiene and safety practice. Avoid inhalation of dusts. Hands and/or face should be washed before breaks and at the end of the shift. Consult the company Industrial Hygienist for recommendations on exposure testing and personal protective equipment.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	granules
Colour:	natural
Odour:	faint
Odour threshold:	not determined
pH value:	not applicable
Melting range:	110 - 120 °C (DIN 53736) 160 - 170 °C (DIN 53736)
Boiling range:	The substance / product decomposes therefore not determined.
Flash point:	> 280 °C (ASTM D1929)
Evaporation rate:	not applicable, The product is a non-volatile solid.
Flammability:	not highly flammable
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the

product is used appropriately and in accordance with the intended use.

Upper explosion limit:

As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Ignition temperature: > 400 °C (ASTM D1929)
Vapour pressure: not applicable
Density: approx. 0.8 - 1.4 g/cm³ (20 °C, 1,013 hPa)
Relative density: approx. 0.8 - 1.4 (20 °C, 1,013 hPa)
Relative vapour density (air): not applicable, The product is a non-volatile solid.
Solubility in water: not soluble (20 °C, 1,013 hPa)
Ph Value: 7 not applicable
Self ignition: not self-igniting

Thermal decomposition: > 295 °C To avoid thermal decomposition, do not overheat.

Explosion hazard: not explosive

Fire promoting properties: not fire-propagating

9.2. Other information

Self heating ability: It is not a substance capable of spontaneous heating.

Bulk density: approx. 500 - 1,000 kg/m³ (DIN 53466)
(20 °C, 1,013 hPa)

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

The product is stable if stored and handled as prescribed/indicated.

10.4. Conditions to avoid

Avoid extreme heat. Avoid all sources of ignition: heat, sparks, open flame.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents

10.6. Hazardous decomposition products

Possible decomposition products:
At prolonged and/or strong thermal stressing above the decomposition temperature dangerous decomposition products can be formed.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Polyester, modified

*Experimental/calculated data:
LD50 rat (oral): > 4,000 mg/kg (OECD Guideline 423)*

Information on: Polylactide

*Experimental/calculated data:
LD50 rat (oral): > 5,000 mg/kg*

Irritation

Assessment of irritating effects:
Not irritating to the eyes. Not irritating to the skin. Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Information on: Polyester, modified

Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Information on: Polyester, modified
Experimental/calculated data:
Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Polyester, modified
Experimental/calculated data:
modified Buehler test guinea pig: Non-sensitizing. (OECD Guideline 406)
Information on: Polylactide
Experimental/calculated data:
guinea pig: Non-sensitizing.

Germ cell mutagenicity

Assessment of mutagenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Carcinogenicity

Assessment of carcinogenicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Reproductive toxicity

Assessment of reproduction toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Other relevant toxicity information

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the structure of the product.

Toxicity to fish:

LC50 > 100 mg/l, Leuciscus idus Literature data.

Information on: Modified esters

Aquatic invertebrates:

EC50 (48 h) > 100 mg/l, Daphnia magna

Literature data.

Information on: Modified esters

Aquatic plants:

EC50 > 100 mg/l, Desmodemus subspicatus

Literature data.

Information on: Polylactide

Aquatic plants:

EC50 (72 h) > 1,000 mg/l, algae

Information on: Polyester, modified

Soil living organisms:

(14 d), Eisenia foetida (OECD Guideline 207, artificial soil)

No effects at the highest test concentration.

Information on: Polyester, modified

Terrestrial plants:

Triticum aestivum (OECD Guideline 208)

No effects at the highest test concentration.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H₂O):
The product is biodegradable.

ASTM D6400
ASTM 5511
ASTM 5526
ISO 15985
Other international standards and methods

12.3. Bioaccumulation potential

Bioaccumulation potential:
Because of the product's consistency and low water solubility, bioavailability is improbable.

Information on: Polyester, modified

Bioaccumulation potential:

The product will not be readily bioavailable due to its consistency and insolubility in water.

Information on: Polylactide

Bioaccumulation potential:

Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Study scientifically not justified.

12.5. Results of PBT and vPvB assessment

The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

12.6. Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Add. remarks environm. fate & pathway:
At the present state of knowledge, no negative ecological effects are expected.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Check for possible recycling.
Observe national and local legal requirements.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.
Completely emptied packagings can be given for recycling.

SECTION 14: Transport Information

Land transport

ADR

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable

Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

RID

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known
Transport in inland

waterway vessel: Not evaluated

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number: Not applicable
UN proper shipping name: Not applicable
Transport hazard class(es): Not applicable
Packing group: Not applicable
Environmental hazards: Not applicable
Special precautions for user: None known

14.1. UN number

See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

A safety data sheet for this product is legally not required and is provided by us just as a courtesy to our customers.

Product is not classified as hazardous.

Chemical Safety Assessment not required

SECTION 16: Other Information

In addition to the information given in the safety data sheet we refer to the product specific 'Technical Information'.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

END DATA SHEET



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