STARDESIGN™ POWER

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

1.1 Product identifier
Brandname: STARDESIGN™ POWER
Product name: Blend of starch ester and stabilized crosslinked starch
REACH status: Exempt

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No</th>
<th>EC#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starch sodium octenyl succinate</td>
<td>52906-93-1</td>
<td></td>
</tr>
<tr>
<td>Starch sodium octenyl succinate</td>
<td>66829-29-6</td>
<td></td>
</tr>
<tr>
<td>Hydroxypropylated distarch phosphate</td>
<td>53124-00-8</td>
<td></td>
</tr>
</tbody>
</table>

Revision date: 27-07-2022

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

1.3 Details of the supplier of the safety data sheet
Company identification
Cargill S.L.U.
c/. Marie Curie, 6 / Apartado de Correos 54
E-08760 Martorell (Barcelona)
Spain
Non emergency telephone
Fax number: +34 (0)93 775 59 50
E-mail address

1.4 Emergency telephone number
Emergency telephone: +34 (0)93 773 38 00 (24/7)

SECTION 2: Hazards identification

2.1 Classification of the substance/mixture
Classification according to Regulation (EC) No 1272/2008 as amended

Hazard summary
Low hazard for recommended handling by trained personnel.

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended

Contains:
Starch

Hazard statement
Not assigned.

Precautionary statements
Safety data sheet according to eu regulation 1907/2006
STARDESIGN™ POWER

Prevention
Not assigned.

Response
Not assigned.

Storage
Not assigned.

Disposal
Not assigned.

Supplemental label information
None.

2.3 Other hazards
None known.

SECTION 3: Composition/information on ingredients

3.1. Substances / 3.2. Mixtures

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</table>

SECTION 4: First aid measures

General information
Not available.

4.1 Description of first aid measures

Inhalation
If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Skin contact
Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact
Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention promptly if symptoms occur after washing.

Ingestion
Seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed
Dust may irritate the eyes and the respiratory system.

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

SECTION 5: Firefighting measures

General fire hazards
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

5.1 Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media
None known.

5.2 Special hazards arising from the substance or mixture
Dust may form explosive mixture with air. This product is a dust explosion class St-1 at normal moisture level.
Minimum Ignition Energy (MIE): >30 mJ at normal moisture level.
Pmax: 9.5 bar
Kst: 195 bar m/s

5.3 Advice for firefighters

Special protective equipment for firefighters
Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

Special firefightings procedures
None known.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedure

For non-emergency personnel
Wear appropriate personal protective equipment.

For emergency responders
Keep unnecessary personnel away.
6.2 Environmental precautions
Prevent runoff from entering drains, sewers, or streams.

6.3 Methods and material for containment and cleaning up
Sweep up spilled substance and remove to safe place. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Nonsparking tools should be used.

6.4 Reference to other sections
For personal protection, see section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid handling which leads to dust formation. Observe good industrial hygiene practices.

If the product is packed in a big bag of class C, according to IEC / ISO 61340-4-4: 2005, then for the control of static electricity in areas with explosion risk, you must always connect the conductive filament present on the sack to a specific anchor point directly grounded during filling and emptying. The integrity and adequacy of the connector and the connection point to the ground, must always be verified by the user before each operation.

7.2. Conditions for safe storage, including any incompatibilities
Keep container closed. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
For national occupational exposure limits see section 15, National regulations

Recommended monitoring procedures
Not established.

DNEL
Not available.

PNEC
Not available.

8.2 Exposure controls
Appropriate engineering controls
Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

General information
Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection
Chemical resistant gloves are recommended.

Other
Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.

Respiratory protection
If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.

Thermal hazards
Not applicable.

Hygiene measures
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls
Environmental manager must be informed of all major releases.

**SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White or slightly yellow powder.</td>
</tr>
<tr>
<td>Odour</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Melting Point/ freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point, initial boiling point and boiling range</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Safety data sheet according to eu regulation 1907/2006

STARDESIGN™ POWER

Flash Point
Auto-ignition temperature
Layer ignition temperature
Flammability (solid, gas)
Flammability limit lower
Flammability limit upper
Oxidising properties

Not applicable.
≥170 °C (338 °F)
>400 °C (752 °F)
Not available.
Not available.
Not available.
Not applicable.

Explosive properties
Explosive limit
Vapour pressure
Vapour density
Evaporation rate
Relative density
Solubility in water
Partition coefficient (Log K octanol/water)
Decomposition temperature
Viscosity
Percent volatile

MIE: >30 mJ at normal moisture level, Pmax: 9.5 bar, Kst: 195 bar m/s
Not applicable.
Not applicable.
Not applicable.
Not applicable.
Not available.
Insoluble/partly soluble
Not available.
Not available.
Not available.
Not available.

Other information
No relevant additional information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
None known.

10.2 Chemical stability
Stable under the prescribed storage conditions.

10.3 Possibility of hazardous reactions
Hazardous polymerization does not occur.

10.4 Conditions to avoid
Incompatible materials. Minimize dust generation and accumulation.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
No hazardous decomposition products are known.
SECTION 11: Toxicological information

General information
Under normal conditions of intended use, this material does not pose a risk to health.

Information on likely routes of exposure

Ingestion
No harmful effects expected in amounts likely to be ingested by accident.

Inhalation
Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact
None known.

Eye contact
Direct contact with eyes may cause temporary irritation.

Symptoms
Dust may irritate the eyes and the respiratory system.

11.1 Information on toxicological effects

Acute toxicity
Dust may irritate the eyes and the respiratory system.

Skin corrosion/irritation
Not assigned.

Serious eye damage/eye irritation
Direct contact with eyes may cause temporary irritation.

Respiratory sensitization
None known.

Skin sensitization
None known.

Germ cell mutagenicity
Not assigned.

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity
None known.
Specific target organ toxicity - single exposure
None known.

Specific target organ toxicity - repeated exposure
None known.

Aspiration hazard
Not applicable.

Mixture versus substance information
Not available.

11.2 Information on other hazards
Not available.

SECTION 12: Ecological information

12.1 Toxicity
No toxicity data noted for the ingredient(s).

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

Mobility
Not available.

Environmental fate - Partition coefficient
Not available.

12.4 Mobility in soil
Not available.

12.5 Results of PBT and vPvB assessment
Not available.

12.6 Other adverse effects
None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Residual waste
Dispose of in accordance with local regulations.

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied.

EU waste code
Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

14.1 UN number
Not regulated as dangerous goods by international transportation rules.

14.2 UN proper shipping name
Not regulated as dangerous goods by international transportation rules.

14.3 Transport hazard class(es)
ADR
Not regulated as dangerous goods by international transportation rules.

RID
Not regulated as dangerous goods by international transportation rules.

ADN
Not regulated as dangerous goods by international transportation rules.

IATA
Not regulated as dangerous goods by international transportation rules.

IMDG
Not regulated as dangerous goods by international transportation rules.

14.4 Packing group
Not regulated as dangerous goods by international transportation rules.

14.5 Environmental hazards
Not regulated as dangerous goods by international transportation rules.

14.6 Special precautions for user
Not regulated as dangerous goods by international transportation rules.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available.

SECTION 15: Regulatory information

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

Other regulations
The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

15.2 Chemical safety assessment
A Chemical Safety Assessment is not required for this substance.


SECTION 16: Other information

List of abbreviations
Not available.

REFERENCES
Not available.

Other information
not available

Revision information
Date of first issue 29-06-2011
Supersedes date 27-07-2022

Information on revision

Reason for changes
Layer ignition temperature data added.

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