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

1.1. Product identifier

Name of the substance: Various Glycans

Identification number: -

Registration number: -

Synonyms: None.

SDS number: SDS Glycans.D


Issue date: 07-March-2014

Version number: AA

Revision date: -

Supersedes date: -

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

Identified uses: Research and development.

Uses advised against: None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name: ProZyme, Inc.

Address: 3832 Bay Center Place

Hayward, CA 94545

Division: -

Telephone: 1-510-638-6900

e-mail: Not available.

Contact person: Not available.

1.4. Emergency telephone number: 1-760-476-3961

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

This substance does not meet the criteria for classification according to Directive 67/548/EEC as amended.

Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary

Physical hazards: Not classified for physical hazards.

Health hazards: Not classified for health hazards.

Environmental hazards: Not classified for hazards to the environment.

Specific hazards: Direct contact with eyes may cause temporary irritation. Prolonged or repeated contact may dry skin and cause irritation.

Main symptoms: May cause temporary irritation on skin or eye contact.

2.2. Label elements

Various Glycans

917627  Version No.: AA  Revision date: -  Issue date: 07-March-2014
Label according to Regulation (EC) No. 1272/2008 as amended

Identification number -

Hazard pictograms None.

Signal word None.

Hazard statements The substance does not meet the criteria for classification.

Precautionary statements

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information None.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>%</th>
<th>CAS-No. / EC No.</th>
<th>REACH Registration No.</th>
<th>INDEX No.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycans/Oligosaccharides</td>
<td>100</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Classification: DSD: -

CLP: -

Composition comments Glycan refers to a polysaccharide or oligosaccharide. The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash skin with soap and water. Get medical attention if irritation develops and persists.

Eye contact Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed May cause temporary irritation on skin or eye contact.

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

SECTION 5: Firefighting measures

General fire hazards This product is not flammable.

5.1. Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

 UNSuitable extinguishing media None known.

5.2. Special hazards arising from the substance or mixture During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

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

Special fire fighting procedures In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Keep unnecessary personnel away. Avoid generation and spreading of dust. Wear appropriate protective equipment and clothing during clean-up.

For emergency responders
Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up
Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. Sweep up or gather material and place in appropriate container for disposal.

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
Minimise dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Ensure adequate ventilation. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Store away from incompatible materials. Recommended storage temperature: -20°C (-4°F)

7.3. Specific end use(s)
Research and development.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Occupational exposure limits
No exposure limits noted for ingredient(s).

Biological limit values
No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures
Follow standard monitoring procedures.

Derived no-effect level (DNEL)
Not available.

Predicted no effect concentrations (PNECs)
Not available.

8.2. Exposure controls
Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

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

Eye/face protection
If contact is likely, safety glasses with side shields are recommended.

Skin protection
- Hand protection
Wear protective gloves.

- Other
Wear suitable protective clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

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

Appearance
- Physical state
Solid.
- Form
Powder. (Lyophilised).
- Colour
White to beige.
Odour: Not available.

Odour threshold: Not available.

pH: Not available.

Melting point/freezing point: Not available.

Initial boiling point and boiling range: Not available.

Flash point: Not available.

Evaporation rate: Not available.

Flammability (solid, gas): Not available.

Upper/lower flammability or explosive limits:

Flammability limit - lower (%): Not available.

Flammability limit - upper (%): Not available.

Vapour pressure: Not available.

Vapour density: Not available.

Relative density: Not available.

Solubility(ies): Not available.

Partition coefficient (n-octanol/water): Not available.

Auto-ignition temperature: Not available.

Decomposition temperature: Not available.

Viscosity: Not available.

Explosive properties: Not available.

Oxidizing properties: Not available.

9.2. Other information: No relevant additional information available.

SECTION 10: Stability and reactivity

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

10.2. Chemical stability: Material is stable under normal conditions.

10.3. Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid: Excessive heat. Contact with incompatible materials.

10.5. Incompatible materials: Strong oxidising agents.

10.6. Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information: Low hazard for usual industrial or commercial handling by trained personnel.

Information on likely routes of exposure:

Ingestion: Expected to be a low ingestion hazard.

Inhalation: No adverse effects due to inhalation are expected.

Skin contact: Prolonged or repeated contact may dry skin and cause irritation.

Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms: May cause temporary irritation on skin or eye contact.

11.1. Information on toxicological effects:

Acute toxicity: Due to lack of data the classification is not possible.

Skin corrosion/irritation: Due to lack of data the classification is not possible.

Serious eye damage/eye irritation: Due to lack of data the classification is not possible.

Respiratory sensitisation: Due to lack of data the classification is not possible.

Skin sensitisation: Due to lack of data the classification is not possible.

Germ cell mutagenicity: Due to lack of data the classification is not possible.

Carcinogenicity: Due to lack of data the classification is not possible.

Reproductive toxicity: Due to lack of data the classification is not possible.
Specific target organ toxicity - single exposure
Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure
Due to lack of data the classification is not possible.

Aspiration hazard
Based on available data, the classification criteria are not met.

Mixture versus substance information
Not available.

Other information
Not available.

SECTION 12: Ecological information

12.1. Toxicity
Not expected to be harmful to aquatic organisms.

12.2. Persistence and degradability
No data is available on the degradability of this product.

12.3. Bioaccumulative potential
Not available.

Partition coefficient
n-octanol/water (log Kow)
Not available.

Bioconcentration factor (BCF)
Not available.

12.4. Mobility in soil
Not available.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Residual waste
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

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

EU waste code
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information
Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Special precautions
Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR
Not regulated as dangerous goods.

RID
Not regulated as dangerous goods.

ADN
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

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

EU regulations
Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I
Not listed.

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex II
Not listed.
Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended
Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended
Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended
Not listed.
Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.
Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry
Not listed.
Regulation (EC) No. 1907/2006, REACH Article 59(1) Candidate List as currently published by ECHA
Not listed.

Authorisations
Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended
Not listed.

Restrictions on use
Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.
Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work
Not listed.
Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding
Not listed.

Other EU regulations
Directive 96/82/EC (Seveso II) on the control of major-accident hazards involving dangerous substances
Not listed.
Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work
Not listed.
Directive 94/33/EC on the protection of young people at work
Not listed.

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.

National regulations
Not available.

15.2. Chemical safety assessment
No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations
TWA: Time weighted average.

References
Not available.

Information on evaluation method leading to the classification of mixture
The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements or R-phrases and H-statements under Sections 2 to 15
None.

Training information
Follow training instructions when handling this material.

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