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

1.1. Product identifier

Trade name or designation of the mixture
Sialidase S™

Registration number
-

Synonyms
None.

SDS number
SDS-GK80021

Product code
GK80021

Issue date
13-July-2016

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

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

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

Health hazards

Skin corrosion/irritation
Category 2
H315 - Causes skin irritation.

Serious eye damage/eye irritation
Category 2
H319 - Causes serious eye irritation.

Respiratory sensitisation
Category 1
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Specific target organ toxicity - single exposure
Category 3 respiratory tract irritation
H335 - May cause respiratory irritation.

Hazard summary

Causes skin irritation. Causes serious eye irritation. Exposure to powder or dusts may be irritating to eyes, nose and throat. May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Occupational exposure to the substance or mixture may cause adverse health effects.

2.2. Label elements

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

Contains:
Neuraminidase, Tris-(hydroxymethyl)aminomethane

Signal word
Danger
Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary statements
Prevention
P261 Avoid breathing dust.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/face protection.
P280 Wear protective gloves.
P285 In case of inadequate ventilation wear respiratory protection.

Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.
P312 Call a POISON CENTRE or doctor/physician if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.
P362 Take off contaminated clothing and wash before reuse.

Storage
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information
None.

2.3. Other hazards
None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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>Neuraminidase</td>
<td>30-40</td>
<td>9001-67-6 / 232-624-6</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Classification: Resp. Sens. 1;H334</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris-(hydroxymethyl)aminomethane</td>
<td>30-40</td>
<td>77-86-1 / 201-064-4</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Classification: Skin Irrit. 2;H315, Eye Irrit. 2;H319, STOT SE 3;H335</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>20-30</td>
<td>7647-14-5 / 231-598-3</td>
<td>Exempted by Annex V(8)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Classification: Eye Irrit. 2;H319</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General information
If you feel unwell, seek medical advice (show the label where possible). 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
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.

Skin contact
Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact
Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Rinse mouth. Get medical attention if symptoms occur.

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Difficulty in breathing. Skin irritation. May cause redness and pain.

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

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

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

Special fire fighting procedures

Use water spray to cool unopened containers.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

For emergency responders

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

6.2. Environmental precautions

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). This product is miscible in water. Stop the flow of material, if this is without risk. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Collect dust using a vacuum cleaner equipped with HEPA filter.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Minimise dust generation and accumulation. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

Research and development.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Occupational exposure limits

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements (Hygiene Norm HN 23:2007)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td>TWA</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. 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
- Wear safety glasses with side shields (or goggles).

Skin protection
- Hand protection
  - Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
- Other
  - Wear appropriate chemical resistant clothing.

Respiratory protection
- Wear positive pressure self-contained breathing apparatus (SCBA).

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
- White to off-white lyophilized powder.

Physical state
- Solid.

Form
- Powder.

Colour
- White to off-white.

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)
Completely soluble.
Partition coefficient (n-octanol/water)
Not available.
Auto-ignition temperature
Not available.
Decomposition temperature
Not available.
Viscosity
Not available.
Explosive properties
Not explosive.
Oxidizing properties
Not oxidising.
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
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
Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure
Inhalation
May cause allergy or asthma symptoms or breathing difficulties if inhaled. Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact
Causes skin irritation.
Eye contact
Causes serious eye irritation.
Ingestion
May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.
Symptoms
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. Difficulty in breathing. Skin irritation. May cause redness and pain.

11.1. Information on toxicological effects
Acute toxicity
May cause respiratory irritation.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Dermal</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 10000 mg/kg</td>
</tr>
<tr>
<td><em>Inhalation</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 42 mg/l, 1 Hours</td>
</tr>
<tr>
<td><em>Oral</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>3550 mg/kg</td>
</tr>
<tr>
<td>Tris-(hydroxymethyl)aminomethane (CAS 77-86-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Oral</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>5900 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Causes skin irritation.
Causes serious eye irritation.  
Respiratory sensitisation May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Skin sensitisation This product is not expected to cause skin sensitisation.  
Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.  
Carcinogenicity Not classifiable as to carcinogenicity to humans.  
Reproductive toxicity This product is not expected to cause reproductive or developmental effects.  
Specific target organ toxicity - single exposure May cause respiratory irritation.  
Specific target organ toxicity - repeated exposure Not classified.  
Aspiration hazard Not an aspiration hazard.  
Mixture versus substance information No information available.  
Other information Not available.  

SECTION 12: Ecological information  
12.1. Toxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.  

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride (CAS 7647-14-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Water flea (Daphnia magna)</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Bluegill (Lepomis macrochirus)</td>
</tr>
<tr>
<td>12.2. Persistence and degradability</td>
<td>No data is available on the degradability of this product.</td>
<td></td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient n-octanol/water (log Kow)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris-(hydroxymethyl)aminomethane (CAS 77-86-1)</td>
<td>-2.31 (20°C)</td>
<td></td>
</tr>
<tr>
<td>Bioconcentration factor (BCF)</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>12.4. Mobility in soil</td>
<td>No data available.</td>
<td></td>
</tr>
<tr>
<td>12.5. Results of PBT and vPvB assessment</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>12.6. Other adverse effects</td>
<td>No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.</td>
<td></td>
</tr>
</tbody>
</table>

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. Empty containers should be taken to an approved waste handling site for recycling or disposal.  
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. Dispose of contents/container in accordance with local/regional/national/international regulations.  
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 and II, as amended
  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.
  Not listed.
- Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
  Not listed.

Authorisations
- Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, 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, as amended
  Not listed.
- Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended
  Not listed.

Other EU regulations
- Directive 2012/18/EU on major accident hazards involving dangerous substances
  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, as amended.

National regulations
Follow national regulation for work with chemical agents. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended.

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

SECTION 16: Other information

List of abbreviations
Not available.

References
Not available.
The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Training information

Follow training instructions when handling this material.

Disclaimer

ProZyme, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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