Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: β-Glucuronidase, from Helix pomatia
Product Number: G7017
Brand: Sigma
Supplier: Sigma-Aldrich
3600 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer): (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8556

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Skin and respiratory sensitizer

Other hazards which do not result in classification
Possible sensitizer.

GHS Classification
Skin irritation (Category 3)
Eye irritation (Category 2B)
Respiratory sensitization (Category 1)
Skin sensitization (Category 1)

GHS Label elements, including precautionary statements

Precautionary statement(s)
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: beta-D-Glucuronide glucuronosidase

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucuronidase, β-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>9001-45-0</td>
<td>Resp. Sens. 1; Skin Sens. 1; H317, H334</td>
</tr>
<tr>
<td>EC-No.</td>
<td>220-608-8</td>
<td>10 - 30 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 15

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
 Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOX), Sulphur oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Do not let product enter drains.

7. HANDLING AND STORAGE

Stability
Stable under normal conditions of storage and use.

Conditions to avoid
Avoid sources of ignition. Do not breathe dust/fumes.

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: May be harmful if swallowed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection
No special protection required where handling this product as directed.

Eye protection
Chemical splash goggles

Body protection
Chemical protective clothing as needed

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Colorless
Odor: None identifiable
Specific gravity: 1.05 at 25°C
Boiling point: 100°C at 1 atm
Flash point: Not applicable
Vapor pressure: Not applicable

10. STABILITY AND REACTIVITY

Reactivity
Stable under normal conditions of storage and use.

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx), Sulphur oxides

11. TOXICOLOGICAL INFORMATION

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: May be harmful if swallowed.

12. ECOTOXICOLOGICAL PROPERTIES

13. DISPOSAL CONSIDERATIONS

Disposal method
Consult local authorities before disposal.

14. TRANSPORT INFORMATION

Transport class: Not applicable
UN number: Not applicable
Packaging group: Not applicable
Transport symbol: Not applicable

15. REGULATORY INFORMATION

Regulatory status
This material is not regulated as a hazardous material under DOT, Hazardous Waste, or IATA regulations.

16. OTHER INFORMATION

Data sources
Sigma-Aldrich internal data and research, relevant to the fatal dose and oral ingestion toxicity, have been reviewed and confirmed with regulatory agencies.

17. SUPPLEMENTARY INFORMATION

For additional information, contact Sigma-Aldrich.

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Methods and materials for containment and cleaning up
Scrub up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE
Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Contains no substances with occupational exposure limit values.

Personal protective equipment
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practice. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance
Form: liquid
Colour: brown

Safety data
pH: no data available
Melting point/freezing point: no data available
Boiling point: no data available
Flash point: no data available
Ignition temperature: no data available
Autoignition temperature: no data available
Lower explosion limit: no data available

10. STABILITY AND REACTIVITY
Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Other decomposition products: no data available
Hazardous decomposition products formed under fire conditions: - nitrogen oxides (NOx), Sulphur oxides

11. TOXICOLOGICAL INFORMATION
Acute toxicity
Oral LD50: no data available
Inhalation LC50: no data available
Dermal LD50: no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a
14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Skin and respiratory sensitizer

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
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<tbody>
<tr>
<td>26628-22-8</td>
<td>2007-07-01</td>
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SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
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<tr>
<td>7783-20-2</td>
<td>1993-04-24</td>
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SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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<tr>
<td>7732-18-5</td>
<td>1993-04-24</td>
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New Jersey Right To Know Components

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<td>1993-04-24</td>
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</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3

H317  May cause an allergic skin reaction.

R364  May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Resp. Sens.  Respiratory sensitization

Skin Sens.  Skin sensitization

Further information
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