1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Active human GAPDH full length protein

Recommended use: For research use only

Supplier Address: Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address: technical@abcam.com

Emergency telephone: Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST.

2. HAZARDS IDENTIFICATION

GHS - Classification

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification (Reg. 1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Classification (Reg. 1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>56-81-5</td>
<td>7-13</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16
4. FIRST AID MEASURES

Eye contact  
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.

Skin contact  
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation  
Move to fresh air.

Ingestion  
Clean mouth with water. Drink plenty of water.

Notes to physician  
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable properties  
Not flammable.

Flash point  
not determined

Suitable extinguishing media  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Explosion Data
Sensitivity to Mechanical Impact  
None.

Sensitivity to Static Discharge  
None.

Protective equipment and precautions for firefighters  
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions  
Ensure adequate ventilation.

Environmental precautions  
Try to prevent the material from entering drains or water courses.

Methods for containment  
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up  
Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Advice on safe handling  
Handle in accordance with good industrial hygiene and safety practice.

Technical measures/Storage conditions  
Keep containers tightly closed in a dry, cool and well-ventilated place.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>TWA: 10 mg/m³ mist</td>
<td>TWA: 15 mg/m³ mist, total particulate TWA: 5 mg/m³ mist, respirable fraction (vacated) TWA: 10 mg/m³ mist, total particulate (vacated) TWA: 5 mg/m³ mist, respirable fraction</td>
<td></td>
</tr>
</tbody>
</table>

Other Exposure Guidelines
Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures
Shower
Eyewash stations
Ventilation systems

Personal protective equipment
Eye/face protection
No special protective equipment required.

Skin and body protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Respiratory protection
No special protective equipment required.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>No information available.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Physical State @20°C</td>
</tr>
<tr>
<td>pH</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Autoignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Boiling point/boiling range</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>No information available.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>Flammability Limits in Air</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>solubility</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Vapor Pressure @20°C (kPa)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>VOC Content(%) 50</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under recommended storage conditions.

Incompatible products
None known based on information supplied.

Conditions to avoid
None known based on information supplied.

Hazardous decomposition products
None known based on information supplied.

Hazardous polymerization
Hazardous polymerization does not occur.
11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information

Product does not present an acute toxicity hazard based on known or supplied information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral (mg/kg)</th>
<th>LD50 Dermal (mg/kg)</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>12600 Rat</td>
<td>21900 Rat</td>
<td></td>
</tr>
</tbody>
</table>

Chronic toxicity

Target Organ Effects


12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to microorganisms</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td>51 - 57: 96 h Oncorhynchus mykiss mL/L LC50 static</td>
<td>500: 24 h Daphnia magna mg/L EC50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>log Pow</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

Not dangerous goods

IATA

Not dangerous goods

ADR

Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard

no
AB82633 - Active human GAPDH full length protein

Revision Date 27-Jul-2018

<table>
<thead>
<tr>
<th>Hazard</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Health Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>no</td>
</tr>
</tbody>
</table>

**Clean Water Act**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**U.S. State Regulations**

**California Proposition 65**
This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

**Glycerol**

<table>
<thead>
<tr>
<th>State</th>
<th>Carcinogen Status</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhode Island</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Mexico:** TWA 10 mg/m³

**International Regulations**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Carcinogen Status</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td></td>
<td>Mexico: TWA 10 mg/m³</td>
</tr>
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</table>

**WHMIS Note:**
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Revision Date 27-Jul-2018
Revision Note No information available.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS