

Safety Data Sheet

Issuing date no data available

Revision Date 15-Oct-2015

Version 5

1. PRODUCT AND COMPANY IDENTIFICATION

Product name liver Arginase protein (Active)

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

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|----------------------|-----------|----------|---|
| Manganese chloride | 7773-01-5 | <0.1 | Acute Tox. 4 (H302) |
| Beta mercaptoethanol | 60-24-2 | <0.1 | Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 2 (H330) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) |

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. |

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.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|---------------------------------|-------------------------------|---|---|
| Manganese chloride 7773-01-5 | TWA: 0.2 mg/m ³ Mn | (vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn | IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn |

NIOSH IDLH: Immediately Dangerous to Life or Health

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 Showers
Eyewash stations
Ventilation systems

Personal protective equipment

- Eye/face protection** No special protective equipment required.
- Skin and body protection** No special protective equipment required.
- Respiratory 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.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | 7.50 | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | | |
| Explosion limits | No information available | | |
| Specific Gravity | no data available | solubility | No information available. |
| Evaporation rate | No information available | Vapor density | no data available |
| VOC Content(%) | not applicable | | |

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.

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------------|-------------------|----------------------|-----------------|
| Manganese chloride | 250 mg/kg (Rat) | | |
| Beta mercaptoethanol | 244 mg/kg (Rat) | 150 µL/kg (Rabbit) | |

Chronic toxicity

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

| Chemical Name | log Pow |
|----------------------|---------|
| Beta mercaptoethanol | -0.056 |

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.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|--------------------|-----------------------------------|
| Manganese chloride | Toxic |

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 |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

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

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|--------------------|---------------|------------|--------------|----------|--------------|
| Manganese chloride | | | X | X | |

| | | | | | |
|----------------------|---|---|---|--|--|
| Beta mercaptoethanol | X | X | X | | |
|----------------------|---|---|---|--|--|

International Regulations

| Chemical Name | Carcinogen Status | Exposure limits |
|--------------------|-------------------|-----------------------------------|
| Manganese chloride | | Mexico: TWA 0.2 mg/m ³ |

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

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed

Revision Date 15-Oct-2015
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