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# SIGMA-ALDRICH

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09/11/2013

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Attached please find the Material Safety Data Sheets required for your recent order(s). Please note that we deliver MSDS documents to you for hazardous materials that you have not ordered previously, or if we have made significant changes to the MSDS content since your last order. In addition, you can access our complete MSDS library at [www.sigmaaldrich.com](http://www.sigmaaldrich.com). You may contact the MSDS department at 877-744-1126 or via email at [msdsrequest@sial.com](mailto:msdsrequest@sial.com) if you have any questions or comments.

Beginning in October 2006, we will be upgrading our computer system that produces MSDS documents. In addition to improving the overall look of our MSDS, the documents from our new system will feature improved data quality and increased regulatory data. We will be migrating our data to the new system for several months, and you will receive separate MSDS mailings from each system during this transition period. We will be sending you MSDS documents from the new system as you order those products, so that you may update your records accordingly. Please feel free to contact us with any questions or comments you may have during our transition.

Regulatory Information:

These MSDS documents are written in accordance with US OSHA Hazard Communication Standard 29 CFR 1910.1200.

Certain mixtures or trade name products that are supplied by Sigma-Aldrich, Inc., contain a toxic chemical or chemicals subject to the notification requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. This law requires certain manufacturers to report on annual emissions of specified toxic chemicals and chemical categories. Please refer to Section 15 of the MSDS document to determine if a Sigma-Aldrich product contains any SARA listed materials.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 424-9346 or (703) 412-9810. Please note that if you repackage, or otherwise redistribute, these products to industrial customers, a notice similar to this one should be sent to those customers. Additionally, this information must be permanently affixed to, and included with, all Material Safety Data Sheets that are copied and distributed for these substances.

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Delivery #'s: 0845707279

PO#: 0000000050

A4862 ALPHA AMYLASE FROM BACILLUS LICHENIFORM&



## Material Safety Data Sheet

Version 5.0  
Revision Date 01/18/2012  
Print Date 09/10/2013

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : alpha-Amylase from Bacillus licheniformis

Product Number : A4862  
Brand : Sigma

Supplier : Sigma-Aldrich  
3050 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  
1-800-521-8956

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Respiratory sensitiser

## GHS Classification

Skin irritation (Category 3)

Eye irritation (Category 2B)

Respiratory sensitization (Category 1)

## GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

## Hazard statement(s)

H316 Causes mild skin irritation.  
H320 Causes eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

## 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.

## HMIS Classification

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 0

## NFPA Rating

Health hazard: 2

Fire: 0  
Reactivity Hazard: 0

## Potential Health Effects

**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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Classification	Concentration
<b>Propane-1,2-diol</b>		
CAS-No.	57-55-6	10 - 30 %
EC-No.	200-338-0	
<b>Amylase, α-</b>		
CAS-No.	9000-90-2	Resp. Sens. 1; H334
EC-No.	232-565-6	
Index-No.	647-015-00-4	

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

## 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. - Carbon 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.

**Methods and materials for containment and cleaning up**

Soak 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****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Propane-1,2-diol	57-55-6	TWA	10 mg/m <sup>3</sup>	USA. Workplace Environmental Exposure Levels (WEEL)

**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 practices. 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 no data available

**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  
Upper explosion limit no data available  
Vapour pressure no data available  
Density no data available  
Water solubility no data available  
Partition coefficient: n-octanol/water no data available  
Relative vapour density no data available  
Odour no data available  
Odour Threshold no data available  
Evaporation rate 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**

Acid chlorides, Acid anhydrides, Oxidizing agents, Chloroformates, Reducing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - no data available

**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 Eyes: no data available

Respiratory or skin sensitization no data available

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 carcinogen or potential carcinogen by ACGIH.
- NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

no data available

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

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

**Signs and Symptoms of Exposure**

Gastrointestinal disturbance, Nausea, Headache, Vomiting, Central nervous system depression

**Synergistic effects**

no data available

**Additional information**

RTECS: Not available

**12. ECOLOGICAL INFORMATION****Toxicity**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

**13. DISPOSAL CONSIDERATIONS****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

**15. REGULATORY INFORMATION****OSHA Hazards**

Respiratory sensitiser

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Water	7732-18-5	
Propane-1,2-diol	57-55-6	1989-08-11
Amylase, α-	9000-90-2	

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Water	7732-18-5	
Propane-1,2-diol	57-55-6	1989-08-11
Amylase, α-	9000-90-2	

**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-phrases(s) mentioned in Section 3**

- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Resp. Sens. Respiratory sensitization

**Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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