Reviewed on 10/27/2008

1 Identification of substance:

Product details: Product name: D-Proline

Stock number:

A10682 L08272

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc. 30 Bond Street

Ward Hill, MA 01835-8099 Emergency Phone: (978) 521-6300 CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department Emergency information:

2 Composition/Data on components: Chemical characterization:

After normal hours call Chemtrec at (800) 424-9300.

During normal hours the Health, Safety and Environmental Department.

Identification number(s): EINECS Number: 206-452-7

D-Proline (CAS# 344-25-2): 100%

3 Hazards identification

Description: (CAS#)

Hazard description: Not applicable

Information pertaining to particular dangers for man and environment Not applicable Classification system HMIS ratings (scale 0-4)

(Hazardous Materials Identification System) Health (acute effects) - 1 Flammability - I FIRE

1 Reactivity - I REACTIVITY 1

4 First aid measures After inhalation Supply fresh air. If required, provide artificial respiration. Keep

Seek immediate medical advice.

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After skin contact

patient warm.

After eye contact Rinse opened eye for several minutes under running water. Then consult a

After swallowing Seek medical treatment.

acc. to OSHA and ANSI

(Contd. on page 2)

Additional information: See Section 7 for information on safe handling See Section 8 for information on personal protection equipment.

Keep container tightly sealed.

Store away from oxidizing agents.

Keep container tightly sealed.

No special requirements.

Not required.

Breathing equipment:

Protection of hands: Impervious gloves

Material of gloves

General Information

Measures for environmental protection:

See Section 13 for disposal information.

Ensure adequate ventilation

governmental permits.

7 Handling and storage Handling Information for safe handling:

Measures for cleaning/collecting: Pick up mechanically.

Store in cool, dry place in tightly closed containers. No special precautions are necessary if used correctly. Information about protection against explosions and fires:

Information about storage in one common storage facility:

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection Additional information about design of technical systems:

Further information about storage conditions:

(Contd. on page 3)

Printing date II/I0/2008 Reviewed on 10/27/2008 Product name: D-Proline (Contd. of page 2) Additional information: No data

Material Safety Data Sheet acc. to OSHA and ANSI

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Components with limit values that require monitoring at the workplace:

Check protective gloves prior to each use for their proper condition.

Page 3/5

Eye protection: Safety glasses Body protection: Protective work clothing.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Form: Crystalline powder Color: White Odori Not determined Change in condition

Flash point: Not applicable Ignition temperature: Not determined Decomposition temperature: Not determined Danger of explosion: Product does not present an explosion hazard. Explosion limits: Lowers Not determined Upper: Not determined Vapor pressure: Not determined Density at 20°C (68°F): 1.36 g/cm³ Solubility in / Miscibility with Water at 20°C (68°F): 1620 g/1 10 Stability and reactivity Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Materials to be avoided: Oxidizing agents

Do not allow material to be released to the environment without proper governmental permits. 13 Disposal considerations

available from the EPA, IARC, NTP, OSHA or ACGIH.

Additional toxicological information:

water, water course or sewage system.

substance is not fully known.

12 Ecological information:

General notes:

Recommendation

DOT regulations: Hazard class:

Product:

Land transport ADR/RID (cross-border) ADR/RID class: None Maritime transport IMDG:

None

Transport/Additional information: Not dangerous according to the above specifications.

For use only by technically qualified individuals.

Product related hazard informations:

suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user. Department issuing MSDS: Health, Safety and Environmental Department.

IMDG Class: None Air transport ICAO-TI and IATA-DGR: ICAO/IATA Class: None (Contd. on page 5)

> Material Safety Data Sheet acc. to OSHA and ANSI

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL). Information about limitation of use:

warranty, and any use of the product not in conformance with this

Observe the general safety regulations when handling chemicals

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance

Other than potential irritation (see above), no information on illness or injury to humans from acute or chronic exposure to this product is To the best of our knowledge the acute and chronic toxicity of this classification data on carcinogenic properties of this material is Do not allow undiluted product or large quantities of it to reach ground

(Contd. on page 4)

Page 5/5

Reviewed on 10/27/2008

(Contd. of page 4)

Page 2/5 Material Safety Data Sheet Printing date II/I0/2008 Reviewed on 10/27/2008 Product name: D-Proline (Contd. of page 1) 5 Fire fighting measures Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards caused by the material, its products of combustion or resulting gases: In case of fire, the following can be released: Carbon monoxide and carbon dioxide Nitrogen oxides (NOx) Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit. 6 Accidental release measures Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.

Do not allow material to be released to the environment without proper

Keep ignition sources away. Requirements to be met by storerooms and receptacles:

Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work.

pirator when high concentrations are present

Melting point/Melting range: 225°C (437°F) (dec) Boiling point/Boiling range: Not determined Sublimation temperature / start: Not determined

9 Physical and chemical properties:

Page 4/5 Material Safety Data Sheet acc. to OSHA and ANSI Reviewed on 10/27/2008 Printing date II/I0/2008 Product name: D-Proline (Contd. of page 3) Dangerous reactions No dangerous reactions known Dangerous products of decomposition: Carbon monoxide and carbon dioxide Nitrogen oxides 11 Toxicological information Acute toxicity: Primary irritant effect: on the skin: May cause irritation on the eye: May cause irritation Sensitization: No sensitizing effects known. Subscute to chronic toxicity:

Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. 14 Transport information Not a hazardous material for transportation.

Printing date II/I0/2008 Product name: D-Proline

15 Regulations

National regulations

Contact: Paul V. Connolly

16 Other information: Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of