



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 03/29/2006

Reviewed on 08/03/2005

1 Identification of substance

Trade name: Alkaline Protease Solution

Article number: A144

Application of the substance / the preparation: Laboratory chemicals

Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Emergency information:

CHEMTREC 1-800-424-9300

for call originating outside the United States dial 001-703-527-3887

2 Composition/Data on components

Chemical characterization

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

9014-01-1	Subtilisin	25-50%
1330-43-4	disodium tetraborate, anhydrous	1.0-5.0%

Additional information: For the wording of the listed risk phrases refer to section 15.

3 Hazards identification

Hazard description:



Xn Harmful

Information pertaining to particular dangers for man and environment:

Irritating to respiratory system and skin.

May cause sensitization by inhalation.

Classification system:

The classification was made according to the latest editions of international substances lists, and is expanded upon by company and technical literature data.

NFPA ratings (scale 0 - 4)

Health = 1

Fire = 0

Reactivity = 0

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HMIS-ratings (scale 0 - 4)

Health = 1

Fire = 0

Reactivity = 0

OSHA Hazard Overview (Criteria according to 29CFR1910.1200):

Irritant

Sensitizer

Primary route(s) of entry:

Dermal

Inhalation

Oral

Target Organ(s): Risk of damage to eyes**4 First aid measures***After inhalation:* In case of unconsciousness place patient stably in side position for transportation.*After skin contact:* Immediately wash with water and soap and rinse thoroughly.*After eye contact:* Rinse opened eye for several minutes under running water.*After swallowing:* If symptoms persist consult doctor.**5 Fire fighting measures****Suitable extinguishing agents:**CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**6 Accidental release measures****Person-related safety precautions:** Not required.**Measures for environmental protection:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

7 Handling and storage**Handling:****Information for safe handling:**

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

No special precautions are necessary if used correctly.

Information about protection against explosions and fires: No special measures required.**Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.

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Further information about storage conditions: Keep receptacle tightly sealed.

8 Exposure controls and personal protection

Components with limit values that require monitoring at the workplace:

9014-01-1 Subtilisin

TLV C 0.00006 mg/m³
(m)

1330-43-4 disodium tetraborate, anhydrous

REL 1 mg/m³

TLV Short-term value: NIC-6 1 ppm
Long-term value: NIC-2 1 ppm
NIC-A4

Additional information: The lists that were valid during the creation were used as basis.

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection: Goggles recommended during refilling.

9 Physical and chemical properties

General Information

Form: Fluid
Color: Colorless
Odor: Characteristic

Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 100°C (212°F)

Flash point: Not applicable.

Ignition temperature: 371.0°C (700°F)

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

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Explosion limits:

Lower: 2.6 Vol %
Upper: 12.6 Vol %

Vapor pressure at 20°C (68°F): 0.1 hPa (0 mm Hg)

Density at 20°C (68°F): 1.06 g/cm³

Solubility in / Miscibility with

Water: Fully miscible.

Solvent content:

Organic solvents: 25.0 %
Water: 21.8 %
VOC content: 25.0 %

Solids content: 3.2 %

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Dangerous reactions No dangerous reactions known.

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Nitrogen oxides

11 Toxicological information

Acute toxicity:**LD/LC50 values that are relevant for classification:**

9014-01-1 Subtilisin

Oral	LD50	2000 mg/kg (Rat)
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Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: Sensitization possible through inhalation.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

12 Ecological information

General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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13 Disposal considerations**Product:****Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information**

Contact Promega Safety Department for additional transportation information

DOT regulations:**Hazard class:** -**Land transport ADR/RID (cross-border):****ADR/RID class:** -**Maritime transport IMDG:****IMDG Class:** -**Marine pollutant:** No**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** -**15 Regulations****Sara****Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65**Chemicals known to cause cancer:**

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity:

None of the ingredients are listed.

Carcinogenity categories**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

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TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

MAK (German Maximum Workplace Concentration)

None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

Hazard symbols:

Xn Harmful

Hazard-determining components of labelling:

Subtilisin

Risk phrases:

Irritating to respiratory system and skin.

May cause sensitization by inhalation.

Safety phrases:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

This material and its container must be disposed of in a safe way.

Wear suitable protective clothing, gloves and eye/face protection.

If swallowed, seek medical advice immediately and show this container or label.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS:

Promega Corporation

Environmental Health and Safety Department

2800 Woods Hollow Road

Madison, WI

Ph: (608)274-4330

* Data compared to the previous version altered.

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