

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 06/20/2008

Reviewed on 06/20/2008

**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

MSDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**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%
57-55-6	propane-1,2-diol	20-25%
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

(Contd. on page 2)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 06/20/2008

Reviewed on 06/20/2008

**Trade name: Alkaline Protease Solution**

(Contd. of page 1)

**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:**

CO<sub>2</sub>, 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.

Prevent formation of aerosols.

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.

(Contd. on page 3)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 06/20/2008

Reviewed on 06/20/2008

Trade name: Alkaline Protease Solution

(Contd. of page 2)

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:**

57-55-6 propane-1,2-diol

WEEL 10 mg/m<sup>3</sup>

1330-43-4 disodium tetraborate, anhydrous

REL 1 mg/m<sup>3</sup>TLV Short-term value: 6 l mg/m<sup>3</sup>Long-term value: 2 l mg/m<sup>3</sup>

**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°C (700°F)

**Auto igniting:** Product is not selfigniting.

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

**Explosion limits:**

**Lower:** 2.6 Vol %

(Contd. on page 4)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 06/20/2008

Reviewed on 06/20/2008

**Trade name: Alkaline Protease Solution**

(Contd. of page 3)

<b>Upper:</b>	12.6 Vol %
<b>Vapor pressure at 20°C (68°F):</b>	0.1 hPa (0 mm Hg)
<b>Density at 20°C (68°F):</b>	1.057 g/cm <sup>3</sup>
<b>Solubility in / Miscibility with Water:</b>	Fully miscible.
<b>Solvent content:</b>	
<b>Organic solvents:</b>	25.0 %
<b>Water:</b>	21.8 %
<b>VOC content:</b>	25.0 %
<b>Solids content:</b>	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:** No dangerous decomposition products known.

## 11 Toxicological information

**Acute toxicity:**

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

**9014-01-1 Subtilisin**

Oral	LD50	2000 mg/kg (Rat)
------	------	------------------

**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.

## 13 Disposal considerations

**Product:**

**Recommendation:**

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

(Contd. on page 5)

USA

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 06/20/2008

Reviewed on 06/20/2008

**Trade name: Alkaline Protease Solution**

(Contd. of page 4)

**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:**

Not regulated

**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 for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

**IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

(Contd. on page 6)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 06/20/2008

Reviewed on 06/20/2008

**Trade name: Alkaline Protease Solution**

(Contd. of page 5)

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**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:**

Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

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

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

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

**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.