Material Safety Data Sheet
acc. to ISO/DIS 11014

1 Identification of the substance/mixture and of the company/undertaking

Product identifier
Trade name: Proteinase K (PK) Solution
Article number: MC5008
Application of the substance / the preparation Laboratory chemicals

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330
Information department: MSDS author: Regulatory.Affairs@promega.com
Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

2 Composition/information on ingredients

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

Dangerous components:
<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-81-5 glycerol</td>
<td>25-50%</td>
</tr>
<tr>
<td>39450-01-6 Proteinase, Tritirachium album serine</td>
<td>&lt;2.50%</td>
</tr>
</tbody>
</table>

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

3 Hazards identification

Classification of the substance or mixture
Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Harmful
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.

Label elements

Labelling according to EU guidelines:
Observe the general safety regulations when handling chemicals.
The product has been classified and marked in accordance with directives on hazardous materials.
Material Safety Data Sheet  
acc. to ISO/DIS 11014  

Printing date: 04/23/2012  
Reviewed on: 02/27/2012  

**Trade name:** Proteinase K (PK) Solution  

| Code letter and hazard designation of product: | Xn Harmful |
| Hazard-determining components of labelling: | Proteinase, Tritirachium album serine |
| Risk phrases: | May cause sensitization by inhalation. |
| Safety phrases: | Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer). |
| | Wear suitable protective clothing. |
| | 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. |

**Classification system:**  

| NFPA ratings (scale 0 - 4) | Health = 0 | Fire = 1 | Reactivity = 0 |
| HMIS-ratings (scale 0 - 4) | Health = 0 | Fire = 1 | Reactivity = 0 |

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

- Irritant  
- Sensitizer  

| Primary route(s) of entry: | Inhalation | Oral |
| Target Organ(s): | May cause Kidney damage (Nephrotoxin) |

**4 First aid measures**  

**After inhalation:**  
Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.  

**After skin contact:** Generally the product does not irritate the skin.  

**After eye contact:** Rinse opened eye for several minutes under running water.  

**After swallowing:** If symptoms persist consult doctor.  

**5 Firefighting measures**  

**Suitable extinguishing agents:**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  

**Special hazards arising from the substance or mixture** None known  

**6 Accidental release measures**  

**Personal precautions, protective equipment and emergency procedures** Wear protective clothing.  

**Environmental precautions:** Do not allow to enter sewers/surface or ground water.  

**Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  

(Contd. on page 3)
Trade name: Proteinase K (PK) Solution

Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

Reference to other sections
See Section 7 for information on safe handling.
See Section 13 for disposal information.

7 Handling and storage

Handling:
Precautions for safe handling
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Work only in fume cabinet.
Information about protection against explosions and fires: Keep respiratory protective device available.

Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-81-5 glycerol</td>
<td>15* 5** mg/m³</td>
<td>10* ppm</td>
</tr>
<tr>
<td></td>
<td>total dust</td>
<td>respirable fraction</td>
</tr>
</tbody>
</table>

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.
Do not eat or drink while working.

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.
**Trade name: Proteinase K (PK) Solution**

### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>pH-value at 20°C (68 °F):</strong></td>
<td>7.2</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>Undetermined</td>
</tr>
<tr>
<td><strong>Flash point:</strong></td>
<td>&gt; 100°C (&gt; 212 °F)</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Ignition temperature:</strong></td>
<td>400°C (752 °F)</td>
</tr>
<tr>
<td><strong>Decomposition temperature:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Auto igniting:</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Danger of explosion:</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits:</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>0.9 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Vapor pressure at 20°C (68 °F):</strong></td>
<td>0.1 hPa</td>
</tr>
<tr>
<td><strong>Density:</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water:</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td><strong>Segregation coefficient (n-octanol/water):</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Solvent content:</strong></td>
<td></td>
</tr>
<tr>
<td>Organic solvents</td>
<td>50.0 %</td>
</tr>
<tr>
<td>Water</td>
<td>47.8 %</td>
</tr>
<tr>
<td>VOC content</td>
<td>50.0 %</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

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

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.
11 Toxicological information

Acute toxicity:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
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

12 Ecological information

Aquatic toxicity: Not harmful to the aquatic environment
Persistence and degradability Not available
Behavior in environmental systems: 
Bioaccumulative potential Not known
Ecotoxicological effects:
Remark: Not available
Additional 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

Waste treatment methods
Recommendation:
Disposal should be in accordance with applicable regional, national and local laws and regulations.
Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>None</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>None</td>
</tr>
<tr>
<td>Packing group</td>
<td>None</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>No</td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td></td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>
Trade name: Proteinase K (PK) Solution

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

15 Regulatory information

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):
56-81-5 glycerol
1185-53-1 2-Amino-2-(hydroxymethyl)-1,3-propanediolhydrochloride
7732-18-5 water, pure

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.

Cancerogenity 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.

TLV (Threshold Limit Value established by ACGIH)
None of the ingredients are listed.

MAK (German Maximum Workplace Concentration)
10043-52-4 Calcium chloride OEL

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:
Observe the general safety regulations when handling chemicals.
The product has been classified and marked in accordance with directives on hazardous materials.
Trade name: Proteinase K (PK) Solution

Hazard symbols:
Xn Harmful

Hazard-determining components of labelling:
Proteinase, Tritirachium album serine

Risk phrases:
May cause sensitization by inhalation.

Safety phrases:
Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
Wear suitable protective clothing.
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:

<table>
<thead>
<tr>
<th>Class</th>
<th>Share in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasser</td>
<td>47.8</td>
</tr>
<tr>
<td>I</td>
<td>2.0</td>
</tr>
<tr>
<td>NK</td>
<td>50.0</td>
</tr>
</tbody>
</table>

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.