SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name            Cre Recombinase
Product No               M0298

Recommended use of the chemical and restrictions on use
Recommended use          This product is for research and development only
Uses advised against     No information available

Details of the supplier of the safety data sheet
Supplier Address         New England BioLabs
                         240 County Road
                         Ipswich, MA 01938
                         USA

Company Phone Number     978-927-5054
                         800-632-5227 (toll free)
Telefax                 978-921-1350
E-mail address          info@neb.com
Emergency telephone number 978-927-5054
                          800-632-5227 (toll free)
                          9:00am - 5:00pm Monday-Friday EST

2. HAZARDS IDENTIFICATION

Classification
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Emergency Overview
The product contains no substances which at their given concentration, are considered to be hazardous to health.

| Appearance | Colorless       | Physical state | Liquid       | Odor | Mild          |

Hazards not otherwise classified (HNOC)

Other information

Note: No data available
4. FIRST AID MEASURES

First aid measures

General advice
Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, lie down. Do not breathe dust/fume/gas/mist/vapors/spray.

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact
Wash skin with soap and water.

Inhalation
Remove to fresh air.

Ingestion
Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed
No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
No information available.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment [PPE]
Use personal protection recommended in Section 8.
Environmental precautions
See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. This material and its container must be disposed of as hazardous waste.

7. HANDLING AND STORAGE

Precautions for safe handling
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage temperature
Refer to www.neb.com for specific information.

Storage Conditions
Keep/store only in original container.

Incompatible materials
None known based on information supplied.

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Control Parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol 56-81-5</td>
<td>-</td>
<td>TWA: 15 mg/m(^3) mist, total particulate TWA: 5 mg/m(^3) mist, respirable fraction (vacated) TWA: 10 mg/m(^3) mist, total particulate (vacated) TWA: 5 mg/m(^3) mist, respirable fraction</td>
<td>-</td>
</tr>
</tbody>
</table>

Other information
Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls
Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin and body protection
Wear suitable protective clothing and gloves.

Respiratory protection
Use in well ventilated areas.
General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point / freezing point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Softening point</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No information available</td>
</tr>
<tr>
<td>VOC content (%)</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical stability
Stable under normal conditions.

Possibility of hazardous reactions
Can react briskly with oxidizers - danger of explosion.

Conditions to avoid

Incompatible materials
Strong oxidizing agents.

**Hazardous decomposition products.**
Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon monoxide. Carbon dioxide (CO2).

### 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Inhalation**
Avoid breathing vapors or mists. May cause irritation of respiratory tract.

**Eye contact**
Redness. May cause slight irritation.

**Skin contact**
Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

**Ingestion**
May cause drowsiness or dizziness. Ingestion causes burns of the upper digestive and respiratory tracts. Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

**Information on toxicological effects**

**Symptoms**
No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Mild</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Mild</td>
</tr>
<tr>
<td>Irritation</td>
<td>Mild</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Mild</td>
</tr>
<tr>
<td>Sensitization</td>
<td>No information available</td>
</tr>
<tr>
<td>Skin</td>
<td>No information available</td>
</tr>
<tr>
<td>Respiratory</td>
<td>No information available</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>No information available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No information available</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**
No information available

**Developmental toxicity**
No information available

**Teratogenicity**
No information available

**STOT - single exposure**
No information available

**STOT - repeated exposure**
No information available

**Chronic toxicity**
No information available

**Subchronic toxicity**
No information available

**Target organ effects**
Eyes, Kidneys, Respiratory system, Skin.

**Neurological effects**
No information available

**Other adverse effects**
No information available

**Aspiration hazard**
No information available

**Numerical measures of toxicity - Product information**

The following values are calculated based on chapter 3.1 of the GHS document. mg/kg mg/l

### 12. ECOLOGICAL INFORMATION

**Marine pollutant**
No information available
**Ecotoxicity**
No information available

0.26639 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

**Persistence and degradability**
No information available

**Bioaccumulation**
No information available

**Mobility**
No information available

**Other adverse effects**
- **Ozone**
  No information available
- **Ozone depletion potential (ODP)**
  No information available

---

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Relevant Information**
Keep out of drains, sewers, ditches and waterways.

**Disposal considerations**
Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packaging**
Empty containers must be tripled rinsed prior to disposal.

---

### 14. TRANSPORT INFORMATION

**DOT**
Not regulated

---

### 15. REGULATORY INFORMATION

**International Inventories**

**TSCA**
Complies

**Legend:**
- **TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**US Federal Regulations**

**CWA (Clean Water Act)**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

---

**Product name** Cre Recombinase  
**Page** 6 / 7  
**Product No** M0298  
**Specification No** No information available
CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Prepared by EH&S Manager
978-927-5054
Prepared by New England BioLabs
Issue date No data available
Revision note SDS is valid 3 years from revision date. Contact info@neb.com for latest revision.
Disclaimer
IMPORTANT: The information in this SDS is provided in good faith based on our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind and we make no warranties or merchantability or fitness for a particular purpose. This information relates only to the designated product as shipped and may not be valid if the product is used in combination with any other materials or is not used in accordance with our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since conditions of use of the product are not under the control of New England Biolabs, it is the duty of the buyer/user to determine the necessary conditions for the safe use of the product. New England Biolabs will not be liable for any damages resulting from handling or contact with the product.

End of Safety Data Sheet