Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name: Amylose Resin
Product No: E8021

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use: This product is for research and development only
Uses advised against: No information available

1.3. 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

For further information, please contact:
E-mail address: info@neb.com

1.4. Emergency telephone number

Emergency telephone:
978-927-5054
800-632-5227 (toll free)
9:00am - 5:00pm Monday-Friday EST

Emergency telephone - §45 - (EC)1272/2008
Europe: 112
Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
Regulation (EC) No 1272/2008

| Chronic aquatic toxicity          | Category 2 - (H411) |
| Flammable liquids                | Category 3 - (H226) |

Classification according to 67/548/EEC
Full text of R-phrases: see section 16

Hazard symbols
Not dangerous

2.2. Label elements
Product identifier

Signal word
Warning

Precautionary Statements - EU (§28, 1272/2008)
P370 + P378 - In case of fire: Use dry sodium carbonate to extinguish
P210 - Keep away from heat/sparks/open flames/hot surfaces. — No smoking

2.3. Other hazards
Other hazards
Toxic to aquatic life
No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC No</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Classification according to 67/548/EEC</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH Registration No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>Present</td>
<td>64-17-5</td>
<td>10 - 30</td>
<td>F; R11</td>
<td>Flam. Liq. 2 (H225)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Full text of R-phrases: see section 16
Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of 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.

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

4.3. **Indication of any immediate medical attention and special treatment needed**

**Note to physicians**
Treat symptomatically.

---

**Section 5: FIRE FIGHTING MEASURES**

5.1. **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.

5.2. **Special hazards arising from the substance or mixture**
No information available

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

---

**Section 6: ACCIDENTAL RELEASE MEASURES**

6.1. **Personal precautions, protective equipment and emergency procedures**

**Personal precautions**
Ensure adequate ventilation, especially in confined areas.

**For emergency responders**
Use personal protection recommended in Section 8.

6.2. **Environmental precautions**
See Section 12 for additional Ecological Information.

6.3. **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.

Section 7: HANDLING AND STORAGE

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

7.2. 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.

7.3. Specific end use(s)

Risk management methods [RMM]
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol 64-17-5</td>
<td>-</td>
<td>STEL: 3000 ppm TWA: 1000 ppm</td>
<td>TWA: 1000 ppm STEL: 9500 mg/m³</td>
<td>STEL: 1000 ppm TWA: 1910 mg/m³</td>
<td>TWA: 500 ppm STEL: 1920 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Italy</th>
<th>Portugal</th>
<th>Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol 64-17-5</td>
<td>-</td>
<td>TWA: 1000 ppm</td>
<td>Skin STEL: 1900 mg/m³ TWA: 260 mg/m³</td>
<td>TWA: 1000 ppm STEL: 1300 ppm TWA: 2500 mg/m³</td>
<td>TWA: 1000 ppm TWA: 1900 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol 64-17-5</td>
<td>STEL 2000 ppm TWA: 1000 ppm TWA: 1900 mg/m³</td>
<td>STEL 1000 ppm TWA: 1900 mg/m³ TWA: 500 ppm TWA: 960 mg/m³</td>
<td>STEL 1900 mg/m³</td>
<td>TWA: 500 ppm STEL 625 ppm STEL: 1187.5 mg/m³</td>
<td>STEL: 1000 ppm</td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL)  No information available

Predicted No Effect Concentration (PNEC)  No information available

8.2. Exposure controls

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.

Environmental exposure controls
See Section 12: ECOLOGICAL INFORMATION.

## Section 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 Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance Colorless</td>
<td></td>
</tr>
<tr>
<td>Odor Mild</td>
<td></td>
</tr>
<tr>
<td>Odor threshold No information available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>Refer to <a href="http://www.neb.com">www.neb.com</a> for specific information</td>
</tr>
<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 36 °C / 97</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>
<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>

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

No data available.
10.2. Chemical stability
Stable under normal conditions.

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

10.4. Conditions to avoid

10.5. Incompatible materials
Strong oxidizing agents.

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

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product information
Product does not present an acute toxicity hazard based on known or supplied information.

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

Unknown acute toxicity
0 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>ATEmix (oral)</th>
<th>35,300.00 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (inhalation-dust/mist)</td>
<td>623.50 mg/l</td>
</tr>
<tr>
<td>ATEmix (inhalation-vapor)</td>
<td>623.50 mg/l</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation Mild
Serious eye damage/eye irritation Mild
Sensitization Mild
Germ cell mutagenicity Mild

Carcinogenicity  No information available

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

Product name  Amylose Resin  Page  6 / 10  Product No  E8021
Specification No  No information available
Neurological effects
No information available

Target organ effects
Blood, Central nervous system, Eyes, Liver, Reproductive System, Respiratory system, Skin.

Other adverse effects
No information available

Symptoms
No information available

Aspiration hazard
No information available

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity
Toxic to aquatic life with long lasting effects

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td></td>
<td>12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through</td>
<td>9268 - 14221: 48 h Daphnia magna mg/L LC50 2: 48 h Daphnia magna mg/L EC50 Static 10800: 24 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No information available

12.3. Bioaccumulative potential
No information available

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>-0.32</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No information available

12.5. Results of PBT and vPvB assessment
No information available

12.6. Other adverse effects

Other adverse effects
No information available

Endocrine disruptor information
No information available

Ozone
No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Relevant Information
Keep out of drains, sewers, ditches and waterways.
Waste from Residues/Unused Products
Disposal should be in accordance with applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator.

Contaminated packaging
Empty containers must be triple rinsed prior to disposal.

Section 14: TRANSPORT INFORMATION

IMDG
14.1 UN/ID No Not regulated
14.2 Proper shipping name Not regulated
14.3 Hazard class Not regulated
14.4 Packing group Not regulated
14.5 Marine pollutant Not applicable
14.6 Special Provisions None
14.7 Transport in bulk according to No information available
Annex II of MARPOL 73/78 and the IBC Code

RID
14.1 UN/ID No Not regulated
14.2 Proper shipping name Not regulated
14.3 Hazard class Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazard Not applicable
14.6 Special Provisions None

ADR
14.1 UN/ID No Not regulated
14.2 Proper shipping name Not regulated
14.3 Hazard class Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazard Not applicable
14.6 Special Provisions None

ICAO (air)
14.1 UN/ID No Not regulated
14.2 Proper shipping name Not regulated
14.3 Hazard class Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazard Not applicable
14.6 Special Provisions None

IATA
14.1 UN/ID No Not regulated
14.2 Proper shipping name Not regulated
14.3 Hazard class Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazard Not applicable
14.6 Special Provisions None

Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National Regulations

Occupational Illnesses (R-463-3, France)

Product name Amylose Resin

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Product No E8021

Specification No No information available
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>French RG number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>RG 84</td>
<td></td>
</tr>
</tbody>
</table>

**European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**International Inventories**

All of the components in the product are on the following Inventory lists: TSCA (United States); Canada (DSL/NDSL); Europe (EINECS/ELINCS), Australia (AICS), South Korea (KECL), China (IECSC), Philippines (PICCS).

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Complies</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td></td>
</tr>
<tr>
<td>EINECS/ELINCS</td>
<td></td>
</tr>
<tr>
<td>DSL</td>
<td></td>
</tr>
<tr>
<td>NDSL</td>
<td></td>
</tr>
<tr>
<td>PICCS</td>
<td></td>
</tr>
<tr>
<td>ENCS</td>
<td></td>
</tr>
<tr>
<td>IECSC</td>
<td></td>
</tr>
<tr>
<td>AICS</td>
<td></td>
</tr>
<tr>
<td>KECL</td>
<td></td>
</tr>
</tbody>
</table>

**Legend**

- TSCA: United States Toxic Substances Control Act Section 8(b) Inventory
- EINECS/ELINCS: European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- DSL/NDSL: Canadian Domestic Substances List/Non-Domestic Substances List
- PICCS: Philippines Inventory of Chemicals and Chemical Substances
- ENCS: Japan Existing and New Chemical Substances
- IECSC: China Inventory of Existing Chemical Substances
- AICS: Australian Inventory of Chemical Substances
- KECL: Korean Existing and Evaluated Chemical Substances

**15.2. Chemical safety assessment**

No information available

**Section 16: OTHER INFORMATION**

**Full text of R-phrases referred to under sections 2 and 3**

R11 - Highly flammable

**Full text of H-Statements referred to under sections 2 and 3**

H225 - Highly flammable liquid and vapor
H411 - Toxic to aquatic life with long lasting effects
H226 - Flammable liquid and vapor

**Prepared by**

EHS Manager
978-927-5054
info@neb.com

**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.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
Disclaimer

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End of Safety Data Sheet