MATERIAL SAFETY DATA SHEET
N, N-Bis(Carboxymethyl)-L-glutamic acid tetrasodium salt - CA. 40% In Water

1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND THE COMPANY UNDERTAKING

   Chemical Name: N, N-bis(Carboxymethyl)-L-glutamic acid tetrasodium salt
   Product Code: FC36385
   Synonyms: -
   Recommended uses: For R&D purposes
   Supplier: Carbosynth Ltd, 8 & 9 Old Station Business Park, Compton, Berkshire, RG20 6NE, UK.
   Emergency contact numbers:
   Telephone: +44 (0)1635 578 444
   Fax: +44 (0)1635 579 444
   Mobile: +44 (0)7887 998 634

2. HAZARDS IDENTIFICATION

   Classification:
   Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 or GHS.
   Not a hazardous substance or mixture according to EC-Directives 67/548/EEC or 1999/45/EC.

   Labelling and precautionary statements:
   The product does not need to be labeled in accordance with EC directives or respective national laws.

   Hazard statement(s): - Not required.
   Precautionary statement(s): - Not required.
   Hazard symbol(s): - Not required.
   R-phrase(s): - Not required.
   S-phrase(s): - Not required.

3. COMPOSITION/INFORMATION ON INGREDIENTS

   Molecular Formula: C₉H₉NO₈ • 4Na
   Molecular weight: 351.13
   CAS Number: 51981-21-6
   EINECS Number: 257-573-7

4. FIRST AID MEASURES

   Eye contact: Immediately flush eye with copious amounts of water for at least 15 minutes. Get medical aid immediately.
   Skin contact: Get medical aid. Immediately wash skin with soap and copious amounts of water for at least 15 minutes. Wash contaminated clothing before reuse.
   Inhalation: Remove to fresh air. If not breathing give artificial respiration.
5. FIRE-FIGHTING MEASURES

Personal precautions: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing media: In case of fire use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.
Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides (NOx), sodium oxides.
Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.

6. ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.
Personal precautions: Wear self-contained breathing apparatus, eye protection and gloves. Keep personal hygiene. Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.
Environmental precautions: Do not let product enter the drains.
Spills/Leaks: Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust) and place the material in appropriate container for disposal and dispose of as hazardous waste. Ventilate area, clean up spills and wash spill site after material pickup is complete, observing precautions in the Protective Equipment section.

7. HANDLING AND STORAGE

Handling: Wash hands and face thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion. Avoid inhalation of vapour or mist.
Storage: Store in a cool, dry, dark, well-ventilated area. Keep container tightly closed. Store away from incompatible materials such as oxidizing agents. Freeze. Keep cold. Store at -20 °C.

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8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

**Personal protection equipment:**

**Eye protection:** Wear appropriate protective safety glasses with side-shields conforming to EN166, chemical safety goggles or face-shield (min. 8-inch) as described by OSHA’s eye and face protection regulations. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Skin protection:** Wear appropriate protective gloves to prevent skin exposure, as defined in EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body protection:** Appropriate protective clothing, overalls.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hygiene measures:** Use good working practices. Wash hands and face thoroughly after handling.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

| **Appearance:** | Solution. |
| **Odour:** | Data not available/does not apply. |
| **Odour threshold:** | Data not available/does not apply. |
| **pH:** | Data not available/does not apply. |
| **Melting point:** | Data not available/does not apply. |
| **Boiling point:** | Data not available/does not apply. |
| **Flash point:** | Data not available/does not apply. |
| **Evaporation rate:** | Data not available/does not apply. |
| **Flammability:** | Data not available/does not apply. |
| **Flammability or explosive limits:** | Data not available/does not apply. |
| **Vapor pressure:** | Data not available/does not apply. |
| **Vapor density:** | Data not available/does not apply. |
| **Density:** | Data not available/does not apply. |
| **Solubility:** | Data not available/does not apply. |
| **Partition coefficient: n-octanol/water** | Data not available/does not apply. |
| **Auto-ignition temperature:** | Data not available/does not apply. |
| **Decomposition temperature:** | Data not available/does not apply. |
| **Viscosity:** | Data not available/does not apply. |

10. **STABILITY AND REACTIVITY**
11. TOXICOLOGICAL INFORMATION

RTCS #: Data not available.
Acute toxicity: Data not available.
Skin corrosion/Irritation: Data not available.
Serious eye damage/eye irritation: Data not available.
Respiratory or skin sensitization: Data not available.
Germ cell mutagenicity: Data not available.
Carcinogenicity: Data not available.
Reproductive toxicity: Data not available.
Specific target organ toxicity - single exposure: Data not available.
Specific target organ toxicity - repeated exposure: Data not available.
Aspiration hazard: Data not available.

Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Potential health effects:
Eye: May cause eye irritation.
Skin: May be harmful by skin absorption. May cause skin irritation.
Ingestion: May be harmful if swallowed.
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Chronic: No information found.

12. ECOLOGICAL INFORMATION

Data not available.
13. DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations. Contact a licensed professional waste disposal service to dispose of this material.

14. TRANSPORT INFORMATION

**ADR/RID**
Not classified as hazardous for transport.

**IMDG**
Not classified as hazardous for transport.

**IATA**
Not classified as hazardous for transport.

15. REGULATORY INFORMATION

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

16. ADDITIONAL INFORMATION

Further information on PPE:
European Standard & performance category markings:

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN166</td>
<td>Standard applicable to all types of personal eye protectors.</td>
</tr>
<tr>
<td>EN374</td>
<td>Protects hands against chemicals and/or microorganisms.</td>
</tr>
<tr>
<td>EN14387</td>
<td>Gas &amp; vapour filters.</td>
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</tbody>
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Gas & vapour protection:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Organic vapours</td>
</tr>
<tr>
<td>B</td>
<td>Inorganic vapours</td>
</tr>
<tr>
<td>E</td>
<td>Acid gases</td>
</tr>
<tr>
<td>K</td>
<td>Ammonia and its derivatives</td>
</tr>
</tbody>
</table>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.