1. IDENTIFICATION OF SUBSTANCE AND COMPANY DETAILS

1.1 Product Identifier
Product name: 0.5M L-Rhamnose monohydrate
Product number: MD2-100(250)-216
EC No.: See section 3
REACH registration No.: See section 3
CAS No.: See section 3

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Research and development
Uses advised against: Not for drug, household or uses other than those identified

1.3 Details of the supplier of the Safety Datasheet
Supplier: Molecular Dimensions Limited
Address: Unit 6 Goodwin Park, Willie Snaith Road, Newmarket, Suffolk, CB8 7SJ, United Kingdom
Telephone: +44 (0)1638 561051
Fax: +44 (0)1638 660674
Email address: enquiries@moleculardimensions.com

1.4 Emergency telephone number
Emergency phone number: 999

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008

2.2 Label elements
Labelling according to Regulation (EC) No. 1277/2008 [CLP]
Pictogram(s):
Hazard statement(s):
See section 2.1.
Precautionary statement(s):
No precautionary statements.

2.3 Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

<table>
<thead>
<tr>
<th>Chemical</th>
<th>EC No.</th>
<th>REACH No.</th>
<th>CAS No.</th>
<th>Concentration</th>
<th>P-code(s)</th>
<th>H-code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-Rhamnose monohydrate</td>
<td>-</td>
<td>-</td>
<td>10030-85-0</td>
<td>0.5M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures
General notes
Consult a doctor. Show this safety datasheet to the doctor in attendance.

Following inhalation
Move to fresh air. If not breathing, give artificial respiration.

Following skin contact
Wash off with soap & water.

Following eye contact
Flush eyes with water.

Following ingestion
Rinse mouth with water.

Self-protection for first aider
Always use recommended PPE when treating patient.

4.2 Most important symptoms and effects, both acute and delayed
The most important known effects are detailed in section 2.2 and section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIRE-FIGHTING METHODS

5.1 Extinguishing media
Use water spray, alcohol resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides.

5.3 Advice for firefighters
Wear breathing apparatus. Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours.

6.2 Environmental precautions
Do not let product enter drains

6.3 Methods and materials for containment and clean up
Use spill kit to contain spillage & use wet brushing to place in a suitable container for disposal. Do not flush with water.
6.4 Reference to any other sections
For disposal, see section 13

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
For precautions, see section 2.2

7.2 Conditions for safe storage, including any incompatibilities.
Store in cool place. Keep container tightly closed in well-ventilated place. Containers which are opened must be carefully resealed and stored upright to prevent leakage.

7.3 Specific end use
Apart from uses in Section 1.2, no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1 Control parameters
None of the constituent chemicals have workplace exposure limits.

8.2 Exposure controls
8.2.1 Appropriate engineering controls
Wash hands before work break and at the end of the day

8.2.2 Personal protection
Eye/face protection
Lab specs.
Skin Protection
Nitrile gloves (splash protection only) and lab coat
Respiratory protection
Use respirators and components tested and approved under appropriate government standards such as CEN (EU) as back up to engineering control
Environmental exposure controls
Do not let product enter drains

9. PHYSICAL AND CHEMICAL PROPERTIES

| a) Appearance | Transparent liquid |
| b) Odour | No data available |
| c) Odour threshold | No data available |
| d) pH | No data available |
| e) Melting point / freezing point | No data available |
| f) Initial boiling point and boiling range | No data available |
| g) Flash point | No data available |
| h) Evaporation rate | No data available |
| i) Flammability | No data available |
| j) Upper / lower flammability or exposure limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Solubility(ies) | No data available |
| o) Partition coefficient: n-octanol / water | No data available |
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidising properties | No data available |

10. STABILITY AND REACTIVITY

10.1 Reactivity | No data available
10.2 Chemical stability | No data available
10.3 Possibility of hazardous reactions | No data available
10.4 Conditions to avoid | No data available
10.5 Incompatible materials | Strong oxidising agents, strong acids, strong bases
10.6 Hazardous decomposition materials | No data available. In case of fire see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

| a) Acute toxicity | No data available |
| b) Skin corrosion / irritation | No data available |
| c) Serious eye damage / irritation | No data available |
| d) Respiratory or skin sensitization | No data available |
| e) Germ cell mutagenicity | No data available |
| f) Carcinogenicity | No data available |
| g) Reproductive toxicity | No data available |
| h) STOT - single exposure | No data available |
| i) STOT - repeated exposure | No data available |
| j) Aspiration hazard | No data available |

11.2 Delayed and immediate effects as well as chronic effects from short to long term exposure
Symptoms
No symptoms.

12. ECOLOGICAL INFORMATION

| 12.1 Toxicity | No data available |
| 12.2 Persistence and degradability | No data available |
| 12.3 Bioaccumulative potential | No data available |
| 12.4 Mobility in soil | No data available |
| 12.5 Results of PBT and vPvB assessment | No data available |
| 12.6 Other adverse effects | No data available |
13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product / packaging disposal
Dispose of packaging as unused product. Offer surplus and non-recyclable solutions to a licensed disposal company.
Observe all EU and local environmental regulations

14. TRANSPORT INFORMATION

14.1 UN number

|---------------|----------------|---------|----------------|---------------|----------------|--------|----------------|

14.2 UN proper shipping name

|---------------|----------------|---------|----------------|---------------|----------------|--------|----------------|

14.3 Transport hazard classes

|---------------|----------------|---------|----------------|---------------|----------------|--------|----------------|

14.4 Packaging group

|---------------|----------------|---------|----------------|---------------|----------------|--------|----------------|

14.5 Environmental hazards

|---------------|----------------|---------|----------------|---------------|----------------|--------|----------------|

14.6 Special precautions for user


15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations
No data available.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

16. OTHER INFORMATION

a) Changes since last revision
First generation

b) Key to any abbreviations used

- PPE
- A.R.D./R.I.D.
- I.M.D.G.
- A.D.N.
- TWA
- STEL

\[\text{SIGMA-ALDRICH.COM} \]
\[\text{FISHERSCI.CO.UK} \]
\[\text{ANATRACE.COM} \]

c) References and sources for data

- sigma-aldrich.com
- fishersci.co.uk
- anatrace.com

d) Indication of methods used for classification (mixtures only)
No data available

e) List of Hazard and Precautionary phrase not listed in full in other sections
See Section 2.1.

f) Advice for training

Disclaimer:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Molecular Dimensions Ltd., shall not be held liable for any damage resulting from handling or from contact with the above product.