1 IDENTIFICATION

Product Identifier 1,3,4,6-Tetra-O-acetyl-2-amino-2-deoxy-β-D-glucopyranose hydrochloride
Synonym(s) 1,3,4,6-Tetra-O-acetyl-β-D-glucosamine hydrochloride, β-D-Glucosamine tetraacetate HCl, NSC 82044
Catalogue Number AG327
Recommended Use Laboratory R&D
Manufacturer / Supplier Synthose Inc.
50 Viceroy Road, Unit 7
Concord, Ontario, L4K 3A7, Canada
Phone +1-905-669-0017
Email admin@synthose.com
Emergency Phone +1-905-669-0017

2 HAZARD IDENTIFICATION

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

3 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>1,3,4,6-Tetra-O-acetyl-2-amino-2-deoxy-β-D-glucopyranose hydrochloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonym(s)</td>
<td>1,3,4,6-Tetra-O-acetyl-β-D-glucosamine hydrochloride, β-D-Glucosamine tetraacetate HCl, NSC 82044</td>
</tr>
<tr>
<td>CAS RN</td>
<td>10034-20-5</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>C14H21NO9.ClH</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>383.78</td>
</tr>
</tbody>
</table>

4 FIRST AID MEASURES

Symptoms and Effects of Exposure
Not determined.

General Advice
Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

If Inhaled
Move to fresh air. If required, give artificial respiration. Consult a physician.

In Case of Skin Contact
Remove contaminated clothing and shoes. Wash off with soap and plenty of water. Consult a physician.

In Case of Eye Contact
Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician.

If Swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5 FIRE FIGHTING MEASURES

Conditions of Flammability
Not flammable or combustible.

Suitable Extinguishing Media
Dry chemical

Unsuitable Extinguishing Media
Not determined

Hazardous Combustion Products
Carbon oxides, Nitrogen oxides, Hydrogen chloride gas

Special Protective Equipment for Firefighters
Wear self-contained breathing apparatus and full protective gear.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions
Wear respiratory protection. Ensure adequate ventilation. Avoid breathing vapors, mist or gas.

Environmental Precautions
Do not allow product to be released to the environment. Do not let product enter drains.
Methods and Materials for Containment and Cleaning Up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7 HANDLING AND STORAGE

Precautions for Safe Handling
Avoid contact with skin and eyes. Avoid inhalation and ingestion. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for Safe Storage
Keep container tightly closed in a dry and well-ventilated place. Ships ambient. Long term storage recommended at -20°C.

Incompatible Materials
Basic solutions

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits
Not determined

Appropriate Engineering Controls
Use mechanical exhaust or laboratory fume hood to avoid exposure.

Individual Protective Measures
Respiratory Protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand Protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye Protection
Wear safety glasses with side-shields conforming to EN166, chemical safety goggles, or face shield. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body Protection
Wear protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White Crystalline Solid</td>
</tr>
<tr>
<td>Odour</td>
<td>Not determined</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting Point Range</td>
<td>216-221 °C</td>
</tr>
<tr>
<td>Boiling Point Range</td>
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</tr>
<tr>
<td>Flash Point</td>
<td>Not determined</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability</td>
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</tr>
<tr>
<td>Lower flammable/explosive limit</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper flammable/explosive limit</td>
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<tr>
<td>Vapour Pressure</td>
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</tr>
<tr>
<td>Vapour Density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility</td>
<td>H2O, DMSO</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>n-octanol / water</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>221 °C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

10 STABILITY AND REACTIVITY

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
Not determined

Conditions to Avoid
Not determined
11 TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure

Inhalation
May be harmful if inhaled. May cause respiratory tract irritation.

Skin Contact
May be harmful if absorbed through skin. May cause skin irritation.

Eye Contact
May cause eye irritation

Ingestion
May be harmful if swallowed

Chronic Effects of Exposure
Not determined

Acute Toxicity
Not determined

12 ECOLOGICAL INFORMATION

Not determined

13 DISPOSAL CONSIDERATIONS

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

14 TRANSPORT INFORMATION

UN Not hazardous for transport
NA / DOT Not hazardous for transport

15 REGULATORY INFORMATION

DSL / NDSL Status The components of this product are not on the DSL Inventory but are manufactured at <100kg per year.

16 OTHER INFORMATION

Date of the Latest Revision of the SDS
2018-07-13

HMIS Classification
Health Hazard 0
Flammability 0
Physical Hazard 0