SAFETY DATA SHEET
HBTU

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name        HBTU
Product number      FH07095
Synonyms; trade names N,N,N',N'-Tetramethyl-O-(1H-benzotriazol-1-yl)uronium hexafluorophosphate, O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate
CAS number          94790-37-1
EC number           423-020-5

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses    Laboratory reagent. Manufacture of substances. Research and development.

1.3. Details of the supplier of the safety data sheet
Supplier            Carbosynth Ltd
                     8&9 Old Station Business Park
                     Compton
                     Berkshire
                     RG20 6NE
                     UK
                     +44 1635 578444
                     +44 1635 579444
                     info@carbosynth.com

1.4. Emergency telephone number
Emergency telephone  +44 7887 998634

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards     Not Classified
Health hazards       Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335
Environmental hazards Not Classified

2.2. Label elements
EC number            423-020-5

Pictogram

Signal word         Warning
HBTU

**Hazard statements**
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

**Precautionary statements**
- P261 Avoid breathing dust.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**2.3. Other hazards**
No data available.

<table>
<thead>
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<th><strong>SECTION 3: Composition/information on ingredients</strong></th>
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</tr>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>CAS number</strong></td>
</tr>
<tr>
<td><strong>EC number</strong></td>
</tr>
<tr>
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<td><strong>Ingestion</strong></td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
</tr>
<tr>
<td><strong>Eye contact</strong></td>
</tr>
</tbody>
</table>

**4.2. Most important symptoms and effects, both acute and delayed**

**General Information**  
See Section 11 for additional information on health hazards.

<table>
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<tr>
<td><strong>Suitable extinguishing media</strong></td>
</tr>
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<th><strong>5.2. Special hazards arising from the substance or mixture</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specific hazards</strong></td>
</tr>
</tbody>
</table>
HBTU

**Hazardous combustion products**
Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen. Oxides of phosphorus. Hydrogen fluoride (HF).

**5.3. Advice for firefighters**

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

### SECTION 6: Accidental release measures

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

**Personal precautions**
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid breathing dust or mist. Provide adequate ventilation. Keep unnecessary and unprotected personnel away from the spillage.

**6.2. Environmental precautions**

Environmental precautions
Avoid discharge into drains or watercourses or onto the ground.

**6.3. Methods and material for containment and cleaning up**

Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

**6.4. Reference to other sections**

Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

### SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Usage precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid generation and spreading of dust. Avoid contact with skin and eyes. Avoid inhalation of dust and vapours.

**7.2. Conditions for safe storage, including any incompatibilities**

Storage precautions
Keep container tightly closed. Store in a cool and well-ventilated place. Store contents under inert gas. Protect from moisture. Protect from light. Store at room temperature.

**7.3. Specific end use(s)**

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

### SECTION 8: Exposure Controls/personal protection

**8.1. Control parameters**

Occupational exposure limits
No exposure limits known for ingredient(s).

**8.2. Exposure controls**

Appropriate engineering controls
Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.
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Eye/face protection

Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls

Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid.</td>
</tr>
<tr>
<td>Colour</td>
<td>White/off-white.</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point</td>
<td>200°C</td>
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<tr>
<td>Initial boiling point and range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Slightly soluble in water.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No data available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>
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9.2. Other information
Molecular weight 379.24

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity No data available.

10.2. Chemical stability
Stability Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions No data available.

10.4. Conditions to avoid
Conditions to avoid Avoid heat.

10.5. Incompatible materials
Materials to avoid Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal
Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (Inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data Irritating.

Serious eye damage/irritation
Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation
Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation
Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity
Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
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**Reproductive toxicity**

- **Reproductive toxicity - fertility** Based on available data the classification criteria are not met.
- **Reproductive toxicity - development** Based on available data the classification criteria are not met.

**Specific target organ toxicity - single exposure**

- **STOT - single exposure** STOT SE 3 - H335 May cause respiratory irritation.
- **Target organs** Respiratory system, lungs

**Specific target organ toxicity - repeated exposure**

- **STOT - repeated exposure** Not classified as a specific target organ toxicant after repeated exposure.

**Aspiration hazard**

- **Aspiration hazard** Not relevant. Solid.

**General information**

Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation**

A single exposure may cause the following adverse effects: Irritation of nose, throat and airway. Difficulty in breathing. Coughing.

**Ingestion**

May cause irritation.

**Skin contact**

Redness. Irritating to skin.

**Eye contact**

Irritating to eyes.

**Route of exposure**

Ingestion Inhalation Skin and/or eye contact

**Target organs** Respiratory system, lungs

### SECTION 12: Ecological Information

**Ecotoxicity** Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

**12.1. Toxicity**

- **Toxicity** Based on available data the classification criteria are not met.

**12.2. Persistence and degradability**

- **Persistence and degradability** The degradability of the product is not known.

**12.3. Bioaccumulative potential**

- **Bioaccumulative potential** No data available on bioaccumulation.
- **Partition coefficient** No data available.

**12.4. Mobility in soil**

- **Mobility** No data available.

**12.5. Results of PBT and vPvB assessment**

- **Results of PBT and vPvB assessment** No data available.

**12.6. Other adverse effects**

- **Other adverse effects** None known.
SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

General
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number
Not applicable.

14.2. UN proper shipping name
Not applicable.

14.3. Transport hazard class(es)
No transport warning sign required.

14.4. Packing group
Not applicable.

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user
Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

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

National regulations
Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.

EU legislation

15.2. Chemical safety assessment
No chemical safety assessment has been carried out.
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SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
CAS: Chemical Abstracts Service.
ATE: Acute Toxicity Estimate.
LC₅₀: Lethal Concentration to 50 % of a test population.
LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
EC₅₀: 50% of maximal Effective Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Persistent and Very Bioaccumulative.

Training advice

Only trained personnel should use this material.

Revision date

27/06/2017

Revision

1

SDS number

144926

Hazard statements in full

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.