Section 1. Product and Company Identification

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Benzyl isothiocyanate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product ID</td>
<td>B1653</td>
</tr>
<tr>
<td>Chemical Name (Synonyms)</td>
<td>Isothiocyanic acid benzyl ester; 2-Bromo-4-trifluoro- methyl-6-nitrophenyl-isothiocyanate</td>
</tr>
<tr>
<td>Supplier</td>
<td>LKT Laboratories, Inc</td>
</tr>
<tr>
<td></td>
<td>545 Phalen Blvd.</td>
</tr>
<tr>
<td></td>
<td>St. Paul, MN 55130 USA</td>
</tr>
<tr>
<td>Emergency Phone #</td>
<td>1-800-424-9300</td>
</tr>
</tbody>
</table>

Section 2. Hazards Identification

GHS Classification
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Skin (Category 4), H312
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Respiratory sensitization (Category 1), H334
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335.

GHS Label elements including precautionary statements

Pictogram

Signal word
Danger

Hazard and precautionary statements
H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.

Precautionary statements
P261 - Avoid breathing dust, fumes, gas, mist, vapors and spray.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves, eye and face protection.
P285 - In case of inadequate ventilation wear respiratory protection.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P322 - Specific measures (see supplemental first aid instructions on this label).
P330 - Rinse mouth.
P332 + P313 - If skin irritation occurs: Get medical advice and or attention.
P337 + P313 - If eye irritation persists: Get medical advice and or attention.
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P352 - Take off contaminated clothing and wash before reuse.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents and or container to an approved waste disposal plant.

HMIS Classification
Health hazard: 2
Chronic health hazard: *
Flammability: 1
Physical hazard: 0

NFPA Rating
Health hazard: 2
Fire hazard: 1
Reactivity hazard: 0

Potential Health Effects
Inhalation: Acute toxicity. May be harmful if inhaled. May cause respiratory tract irritation.
Skin: Acute toxicity. May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: Acute toxicity. Harmful if swallowed.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Formula</th>
<th>Formula Wt.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C_{8}H_{7}NS</td>
<td>149.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS No.</td>
<td>622-78-6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

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

Eye Contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact
Wash off with soap and plenty of water. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

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

Section 5. Firefighting Measures

Flash Point
>110 °C (>230°F) - closed cup.

Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Firefighting Procedures
Wear self-contained breathing apparatus for fire fighting if necessary.

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx), sulfur oxides.

Section 6. Accidental Release Measures

Personal Precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Do not let product enter drains.

Methods and materials for containment and cleanup
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for preventive fire protection.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: 4°C.

Hazardous Decomposition Products
Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides.

Other Remarks
This product is light and moisture sensitive. Handle and store under inert gas.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

*EXPOSURE CONTROLS*
Contains no substances with occupational exposure limit values. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

*PERSONAL PROTECTION*

**Eye/face protection** - Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Skin 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.

**Body protection** - Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection** - Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>Clear, light yellow liquid.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>242°C-243°C</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Melting Point</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solubility</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble in DMSO, ethanol, or chloroform.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>Ignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;110 °C (&gt;230°F) - closed cup.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relative vapor density</th>
<th>Evaporation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

**Stability**

Stable under recommended storage conditions.

**Materials To Avoid**

Keep away from heat, strong oxidizing agents, alcohols, amines, strong bases, and acids.

**Hazardous Decomposition Products**

Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides.
Section 11. Toxicological Information

Oral LD50 Not available.

Inhalation LC50 Not available.

Dermal LD50 Not available.

Other information on acute toxicity Not available.

Skin corrosion/irritation Not available.

Serious eye damage/irritation Not available.

Respiratory or skin sensitization Not available.

Germ cell mutagenicity hamster, ovary, cytogenetic analysis hamster, ovary, DNA damage hamster, ovary, Sister chromatid exchange mammal, cytogenetic analysis mammal, other mutation test systems

Reproductive Toxicity Not available.

Specific organ toxicity single exposure (GHS) Inhalation - may cause respiratory irritation.

Specific organ toxicity repeated exposure (GHS) Not available.

Teratogenicity Not available.

Aspiration Hazard Not available.

Synergistic effects Not available.

Additional Information RTECS: NX8250000

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

Signs and symptoms of exposure Cough, shortness of breath, headache, nausea, vomiting.

Potential Health Effects Inhalation: Acute toxicity. May be harmful if inhaled. May cause respiratory tract irritation. Skin: Acute toxicity. May be harmful if absorbed through skin. May cause skin irritation. Eyes: May cause eye irritation. Ingestion: Acute toxicity. Harmful if swallowed.

Carcinogenicity IARC: 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. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Section 12. Ecological Information

Toxicity Toxicity to daphnia and other aquatic invertebrates - LC50 - Daphnia magna (Water flea) - 0.043 mg/l - 48h

Mobility in soil Not available.

PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not
Section 13. Disposal Considerations

Waste Disposal
Dispose of material according to all federal, state, and local regulations. Offer material to a licensed, professional waste disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of as unused product.

Section 14. Transport Information

DOT (US)
UN number: 3334  Class: 9
Proper shipping name: A aviation regulated liquid, n.o.s. (Benzyl isothiocyanate)
Marine pollutant: No, Poison inhalation hazard: No

IATA
UN number 3334, Class: 9, Packing group: III
Proper shipping name: Aviation regulated liquid, n.o.s. (Benzyl isothiocyanate)

IMDG
Not dangerous goods.

Further Information

Section 15. Regulatory Information

Reach No.

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARATitle III, Section 313.

SARA 311/312 Components
Acute health hazard.

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
Benzyl isothiocyanate  CAS #: 622-78-6  Revision Date:

New Jersey Right To Know Components
Benzyl isothiocyanate  CAS #: 622-78-6  Revision Date:

California Prop 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other reproductive harm.

Section 16. Other Information

Other information
The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.