IDENTIFICATION

MSDS Record Number: 5617503
Product Name(s): BENZOTRIFLUORIDE
Product Identification: MSDS NUMBER: B1700
PRODUCT CODE: 3932
C.A.S. NUMBER: 98-08-8
Date of MSDS: 2004-02-12
Currency Note: This MSDS was acquired from the supplier on 2007-09-06.

MANUFACTURER/SUPPLIER INFORMATION

Company: MALLINCKRODT BAKER INC

MATERIAL SAFETY DATA

Effective Date: 02/12/04
Supercedes: 04/10/01

--- MATERIAL SAFETY DATA SHEET
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From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865
Emergency Telephone Number: 908-859-2151

CHEMTREC: 800-424-9300 (USA)
703-527-3887 (Outside USA & CANADA)
CANUTEC: 613-996-6666
NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

J. T. BAKER

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BENZOTRIFLUORIDE

1. Product Identification

Synonyms: Benzene, trifluoromethyl; BTF; Toluene, alpha,alpha,alpha-trifluoro-
CAS No: 98-08-8
Molecular Weight: 146.11
Chemical Formula: C7H5F3
2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzotrifluoride</td>
<td>98-08-8</td>
<td>100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

- **Health Rating:** 2 - Moderate
- **Flammability Rating:** 3 - Severe (Flammable)
- **Reactivity Rating:** 0 - None
- **Contact Rating:** 1 - Slight
- **Lab Protective Equip:** GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
- **Storage Color Code:** Red (Flammable)

Potential Health Effects

Inhalation:
Inhalation of vapor can irritate respiratory tract. Causes central nervous system effects. Breathing high concentrations in air can cause lightheadedness, dizziness, weakness, nausea, headache.

Ingestion:
Harmful if swallowed. Symptoms may parallel those of inhalation. Causes irritation to the gastrointestinal tract.

Skin Contact:
Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:
Causes irritation, redness, pain, and blurred vision.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. CALL A PHYSICIAN IMMEDIATELY.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact:
In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician immediately.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:
Flash point: 12C (54F) CC
Flammable liquid and vapor!
Dangerous fire hazard when exposed to heat or flame. Vapors can flow along surfaces to distant ignition source and flash back.

Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Contact with strong oxidizers may cause fire or explosion. Sensível a descargas estáticas.

Fire Extinguishing Media:
Dry chemical, foam or carbon dioxide. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire exposed containers cool.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed
8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the substance is apparent and engineering controls are not feasible, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Water white liquid.

Boiling Point: 102°C (216°F)

Odor: Aromatic odor.

Melting Point: -29°C (-20°F)

Solubility: Negligible.

Vapor Density (Air=1): 5.0

Specific Gravity: 1.185

Vapor Pressure (mm Hg): 31 @ 20°C (68°F)

pH: No information found.

Evaporation Rate (BuAc=1): 2.8

Octanol/Water Partition Coefficient: log Kow=3.01

% Volatiles by volume @ 21°C (70°F): 100

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition. Will generate toxic fumes of hydrogen fluoride and other organic fluorides when overheated. May decompose to form hydrofluoric acid and benzoic acid.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Oxidizers.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Inhalation rat LC50: 70810 mg/m3/4H;
Oral rat LD50: 15 gm/kg

--- NTP Carcinogen ---

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Known</th>
<th>Anticipated</th>
<th>IARC Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzo trifluoride (98-08-8)</td>
<td>No</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
This material is expected to be toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: BENZOTRIFLUORIDE
Hazard Class: 3
UN/NA: UN2338 Packing Group: II
Information reported for product/size: 20L
15. Regulatory Information

\begin{tabular}{|l|c|c|c|c|}
\hline
Ingredient & TSCA & EC & Japan & Australia \\
\hline
Benzotrifluoride (98-08-8) & Yes & Yes & Yes & No \\
\hline
\end{tabular}

\begin{tabular}{|l|c|c|c|c|}
\hline
Ingredient & Korea & DSL & NDSL & Phil. \\
\hline
Benzotrifluoride (98-08-8) & No & No & Yes & Yes \\
\hline
\end{tabular}

\begin{tabular}{|l|c|c|c|c|}
\hline
Ingredient & RQ & TPQ & List Chemical Categ. \\
\hline
Benzotrifluoride (98-08-8) & No & No & No & No \\
\hline
\end{tabular}

\begin{tabular}{|l|c|l|}
\hline
Ingredient & CERCLA & 261.33 \\
\hline
Benzotrifluoride (98-08-8) & No & 8(d) \\
\hline
\end{tabular}

Chemical Weapons Convention: No  
TSCA 12(b): No  
SARA 311/312: Acute: Yes Chronic: No  
Fire: Yes Pressure: No  
Reactivity: No  
(Pure / Liquid)

Australian Hazchem Code: 2YE  
Australian Poison Schedule: None allocated.

WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:
Health: 3  Flammability: 3  Reactivity: 0

Label Hazard Warning:
WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL
NERVOUS SYSTEM.

Label Precautions:
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.

Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases call a physician immediately.

Product Use:
Laboratory Reagent.

Revision Information:
No Changes.

Disclaimer:
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B1700

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