

## MATERIAL SAFETY DATA SHEET

Revised

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MSDS NUMBER :** M7644

**ISSUE DATE :** 07-08-98

**PRODUCT NAME :** BENZOTRIFLUORIDE

**Manufacturer's Name and Address :** Occidental Chemical Corporation, Occidental Tower  
5005 LBJ Freeway, P.O. Box 809050  
Dallas, TX 75380 (972) 404-3800

**24 HOUR EMERGENCY TELEPHONE :** 1-800-733-3665 OR 972-404-3228

**TO REQUEST AN MSDS :** 1-800-699-4970

**CUSTOMER SERVICE :** 1-800-752-5151

**PRODUCT USE :** Chemical Intermediate, Solvent

**CHEMICAL NAME :** Benzene, Trifluoromethyl

**CHEMICAL FORMULA :** C<sub>7</sub>H<sub>5</sub>F<sub>3</sub>

**SYNONYMS/COMMON NAMES :** BTF  
Alpha,Alpha,Alpha- Trifluorotoluene

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS NUMBER / NAME  
98-08-8 Benzene, (trifluoromethyl)-

EXPOSURE LIMITS	PERCENTAGE
PEL:Not Established	VOL ND
TLV:Not Established	WT 99.50-100
CEL:100 ppm	

COMMON NAMES:  
BENZOTRIFLUORIDE

Listed On(List Legend Below):  
00 12 21 36 50 51

#### LIST LEGEND

00 TSCA INVENTORY	12 PA HAZARDOUS SUBSTANCE
21 NJ SPECIAL HEALTH HAZ SUB	36 CANADIAN NDSL
50 PHILIPPINES INVENTORY (PICCS)	51 EINECS

### 3. HAZARDS IDENTIFICATION

\*\*\*\*\* EMERGENCY OVERVIEW \*\*\*\*\*  
\*  
\* FLAMMABLE LIQUID. LIQUID, VAPORS OR MIST MAY BE IRRITATING TO  
\* EYES, SKIN AND RESPIRATORY TRACT.  
\*  
\* Water white liquid with aromatic odor.  
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#### POTENTIAL HEALTH EFFECTS

##### ROUTES OF ENTRY:

Eyes, Ingestion, Inhalation, Skin.

##### TARGET ORGANS:

Central Nervous System, Eyes, Skin, Respiratory Tract.

##### IRRITANCY:

All routes of exposure.

##### SENSITIZING CAPABILITY:

None known.

##### REPRODUCTIVE EFFECTS:

None known.

##### CANCER INFORMATION:

None known.

#### SHORT-TERM EXPOSURE (ACUTE)

##### INHALATION:

May produce symptoms of central nervous system depression including headache, dizziness, nausea, loss of balance and drowsiness.

##### EYES:

May be irritating.

##### SKIN:

May be irritating.

##### INGESTION:

May be irritating.

#### REPEATED EXPOSURE (CHRONIC)

No known chronic effects.

##### SYNERGISTIC MATERIALS:

None known.

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### 3. HAZARDS IDENTIFICATION (Continued)

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#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

None known.

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### 4. FIRST AID MEASURES

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#### EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. IF IRRITATION PERSISTS GET MEDICAL ATTENTION.

#### SKIN:

Wash thoroughly with soap and water. Wash clothing before reuse. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

#### INHALATION:

Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have a trained person administer artificial respiration. GET MEDICAL ATTENTION IMMEDIATELY.

#### INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Have patient drink several glasses of water then induce vomiting by having patient tickle back of throat with finger. Keep airway clear. GET MEDICAL ATTENTION IMMEDIATELY.

#### NOTES TO PHYSICIAN:

None.

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### 5. FIRE FIGHTING MEASURES

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Flash Point: 54°F (12°C)

Method: TAG CC

Autoignition Temperature: Not determined

#### FLAMMABLE LIMITS IN AIR, BY % VOLUME

Upper: Not determined  
Lower: Not determined

#### EXTINGUISHING MEDIA:

Foam, dry chemical, carbon dioxide, water fog or spray.

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## 5. FIRE FIGHTING MEASURES (Continued)

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### FIRE FIGHTING PROCEDURES:

Evacuate all unnecessary personnel. Shut down motors, pumps, electrical service and eliminate all sources of ignition. Use water spray to keep fire exposed containers cool to avoid pressure buildup. Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

### FIRE AND EXPLOSION HAZARD:

FLAMMABLE LIQUID.

Over-heated drums may rupture. Heavy vapors can travel to source of ignition and flash back.

### SENSITIVITY TO MECHANICAL IMPACT:

None known.

### SENSITIVITY TO STATIC DISCHARGE:

Electrostatic charge may build up during handling. Grounding of equipment is recommended.

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## 6. ACCIDENTAL RELEASE MEASURES

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### PERSONAL PRECAUTIONS:

Evacuate unnecessary personnel and eliminate all sources of ignition.

Follow protective measures provided under Personal Protection in Section 8.

### ENVIRONMENTAL PRECAUTIONS:

Contain liquids and prevent discharges to streams or sewers, control or stop the loss of volatile materials to the atmosphere. Large leaks may require environmental consideration and possible evacuation. Do not apply water to the leak. Spills or releases should be reported, if required, to the appropriate local, state and federal agencies.

### METHODS FOR CLEANING UP:

If a significant spill occurs, evacuate area. If exposure conditions warrant, wear a NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing. Shut off electrical service and protect from ignition. Contain spill or release with a dike to prevent flow into sewers or streams. Pump into container for disposal or reclamation. Soak up small spills with absorbent material.

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## 7. HANDLING AND STORAGE

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### HANDLING:

Avoid breathing vapor, use with adequate ventilation. Wear NIOSH/MSHA approved respiratory protection if there is potential for exposure above the exposure limits.

Do not get in eyes, on skin or clothing.

Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the MSDS.

Wash thoroughly with soap and water after handling.

Keep away from heat, sparks, pilot lights, welding operations and open flame.

Do not eat, drink or smoke in areas where this material is used.

Ground all equipment.

Avoid contact with high temperature sources, pure oxygen, alkali metals, strong UV light (welding arcs) as this can cause decomposition, resulting in toxic and irritating vapors.

Never enter a pit or tank without following safety procedures-never alone, always with a lifeline and positive pressure supplied air.

Vapors are heavier than air and will tend to collect in low areas. Avoid use in confined spaces. Areas of poor ventilation could contain concentrations high enough to cause unconsciousness and death. Use approved supplied air respirator following manufacturer's recommendations where vapors may be generated.

Do not reuse containers.

### SPECIAL MIXING AND HANDLING INSTRUCTIONS:

Do not allow contact with materials as noted in Section 10.

### STORAGE:

Keep container tightly closed and properly labeled.

Store containers in a cool, dry, ventilated, fire resistant area away from direct heat and separated from oxidizers.

Dike storage containers to contain 110% of tank volume.

Vent indoor tanks to an outside location so escaping vapors will not contaminate any work areas.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### ENGINEERING CONTROLS:

Where engineering controls are not feasible use adequate local exhaust ventilation wherever mist, spray or vapor may be generated.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

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Provide good room ventilation plus local exhaust at points of emission and low level floor exhaust in immediate handling area.

### PERSONAL PROTECTION

#### RESPIRATORY:

For emergencies and unknown concentrations, use NIOSH/MSHA approved positive pressure self-contained breathing apparatus. Utilize respiratory protective equipment in accordance with 29CFR 1910.134 (Respiratory Protection).

#### EYE/FACE:

Wear chemical safety goggles plus full face shield to protect against splashing when appropriate (ANSI Z87.1).

#### SKIN:

Wear chemical resistant gloves such as North Silver Shield® or Viton®. For limited use, PVC or nitrile gloves may be worn. Silver Shield is a registered trademark of Siebe North, Inc. Viton is a registered trademark of E. I. DuPont de Nemours and Company, Inc.

#### OTHER:

Emergency shower and eyewash facility should be in close proximity (ANSI Z358.1).

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance and Odor: Water white liquid with aromatic odor.

Odor Threshold: Not available

Specific Gravity (Water=1): 1.185

Vapor Pressure: 31 mm Hg @ 20°C

Vapor Density (Air=1): 5.0

Density: 9.88 lb./gal. @20°C

Evaporation Rate: Not available

% Volatiles by Wt: 100

Boiling Point: 102°C (216°F)

Freezing Point: -29°C (-20°F)

Melting Point: -29°C (-20°F)

Solubility in Water (% by wt.): Negligible

pH: Not available

Octanol/Water Partition Coefficient: log Kow = 3.01

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## 9. PHYSICAL AND CHEMICAL PROPERTIES (Continued)

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Thermal Decomposition Temperature: Not available

Other: Not available

VOC (g/l. by wt.): 1185

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## 10. STABILITY AND REACTIVITY

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### CHEMICAL STABILITY:

  X   STABLE             UNSTABLE

### REACTS WITH:

<u>      </u> AIR	<u>  X  </u> OXIDIZERS	<u>      </u> METALS
<u>      </u> WATER	<u>      </u> ACIDS	<u>      </u> OTHER
<u>  X  </u> HEAT	<u>      </u> ALKALIS	<u>      </u> NONE

### HAZARDOUS POLYMERIZATION:

       OCCURS        X   WILL NOT OCCUR

### COMMENTS:

Avoid heat, sparks and open flames.

### HAZARDOUS DECOMPOSITION PRODUCTS:

Will generate toxic fumes of hydrogen fluoride and other organic fluorides when overheated.

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Revised

## 11. TOXICOLOGICAL INFORMATION

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### 98-08-8      Benzene, (trifluoromethyl)-

ACUTE ORAL LD50 :	(rat)	>5 g/kg practically non-toxic
ACUTE INHALATION LC50 :	(rat, 4hr)	>46.9 mg/L practically non-toxic
PRIMARY EYE IRRITATION :	(rabbit)	0-15/110 Draize No appreciable effect
PRIMARY SKIN IRRITATION :	(rabbit)	1.5/8 Draize Slightly irritating
MUTAGENICITY:	(Ames test)	Negative

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## 12. ECOLOGICAL INFORMATION

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### 98-08-8 Benzene, (trifluoromethyl)-

#### AQUATIC ECOTOX DATA

##### Fish:

LC50 (96 hr.) (Fathead minnow) 12 mg/L

BCF (42 days) (Carp) 26-58

##### Invertebrates:

EC50 (48 hr.) (Water flea) 10 mg/L

##### Amphibians:

LDLo (Frog) 870 mg/Kg

##### Plants:

EC50 (24 hr.) (Algae) 22 mg/L

#### TERRESTRIAL ECOTOX DATA

##### Wildlife:

No data available

#### ENVIRONMENTAL FATE DATA

##### Biotic:

Biodegradation has not been demonstrated

##### Abiotic:

Air (1/2 life) estimate for reaction with OH radicals is 34.9 days

Water(1/2 life) estimates for volatilization range from 0.15 - 4.8 day

Water solubility 250 mg/L

Log Kow 3.01

Koc model estimate based on Log Kow is 1030

This compound has produced moderate toxicity to three aquatic organisms in laboratory tests. The exposure concentrations in these tests were difficult to maintain due to this compound's extreme volatility in water. If released to surface water or moist soil, this compound is soluble to 250 mg/L. It is unlikely to biodegrade since volatilization to the atmosphere is the dominant fate process. BCF data indicate that this material is unlikely to bioaccumulate to significant levels in organisms. Based on the Koc, this compound is predicted to have a low mobility in soil. Due caution should be exercised to prevent the accidental release of this material to the environment.

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## 13. DISPOSAL CONSIDERATIONS

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Recovered nonusable material is a RCRA Hazardous Waste. Treatment, storage, transportation and disposal must be in accordance with EPA and State regulations under the authority of the Resource Conservation and Recovery Act (RCRA) 40 CFR parts 260-271.



Revised

## 14. TRANSPORT INFORMATION

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DOT PROPER SHIPPING NAME: Benzotrifluoride  
DOT HAZARD CLASS: 3  
DOT IDENTIFICATION NO: UN2338  
DOT PACKING GROUP: II  
DOT HAZARDOUS SUBSTANCE: Not Applicable  
DOT MARINE POLLUTANT(S): Not Applicable  
ADDITIONAL DESCRIPTION REQUIREMENT: Not Applicable

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## 15. REGULATORY INFORMATION

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### U.S. FEDERAL REGULATIONS:

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III Hazard Categories for this product are indicated below. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40.CFR.370. Please consult those regulations for details.

### TSCA:

All components of this product that are required to be on the TSCA inventory are listed on the inventory.

### SARA/TITLE III HAZARD CATEGORIES:

Immediate(Acute) Health:	<u>YES</u>	Reactive Hazard	<u>NO</u>
Delayed(Chronic) Health:	<u>NO</u>	Sudden Release of Pressure	<u>NO</u>
Fire Hazard:	<u>YES</u>		

### HMIS HAZARD RATINGS:

HEALTH HAZARD: 2 FIRE HAZARD: 3 REACTIVITY: 1

### STATE REGULATIONS:

See Section 2. COMPOSITION/INFORMATION ON INGREDIENTS list legend for applicable state regulation.

### INTERNATIONAL REGULATIONS:

Consult the regulations of the importing country.

### CANADA:

WHMIS Hazard Class: B2

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## 16. OTHER INFORMATION

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For additional non-emergency health, safety or environmental information telephone (972) 404-2076 or write to:

Occidental Chemical Corporation  
Product Stewardship Department  
5005 LBJ Freeway  
P.O. Box 809050  
Dallas, Texas 75380

### MSDS LEGEND:

ACGIH = American Conference of Governmental Industrial Hygienists

CAS = Chemical Abstracts Service Registry Number

CEILING = Ceiling Limit (15 Minutes)

CEL = Corporate Exposure Limit

OSHA = Occupational Safety and Health Administration

PEL = Permissible Exposure Limit (OSHA)

STEL = Short Term Exposure Limit (15 Minutes)

TDG = Transportation of Dangerous Goods (Canada)

TLV = Threshold Limit Value (ACGIH)

TWA = Time Weighted Average (8 Hours)

WHMIS = Worker Hazardous Materials Information System (Canada)

\* = See Section 3 Hazards Identification - Repeated Exposure(Chronic) Information

IMPORTANT: The information presented herein, while not guaranteed, was prepared by competent technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, OR OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling and storage. Other factors may involve other or additional safety or performance considerations. While our technical personnel will be happy to respond to questions regarding safe handling and use procedures, safe handling and use remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as a recommendation to infringe any existing patents or violate any federal, state or local laws, rules, regulations or ordinances.

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## 17. WARNING LABEL INFORMATION

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### SIGNAL WORD:

DANGER

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## 17. WARNING LABEL INFORMATION (Continued)

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### HAZARD WARNINGS:

Flash Point: 54°F (12°C)

FLAMMABLE LIQUID.

LIQUID, VAPORS OR MIST MAY BE IRRITATING TO EYES, SKIN AND RESPIRATORY TRACT.

### PRECAUTIONS:

Keep away from heat, sparks, pilot lights, welding operations and open flame.

Avoid breathing dust, vapors or mist.

Avoid contact with eyes, skin and clothing.

Do not swallow.

Do not eat, drink or smoke in areas where this material is used.

Wash thoroughly with soap and water after handling.

Do not reuse container. Product residues may remain. All labeled precautions MUST be observed.

Ground all equipment before use.

Never enter a pit or tank without following safety procedures - never alone, always with a lifeline, and always with a positive pressure supply of fresh air. Avoid use in confined spaces.

Before using, read Material Safety Data Sheet (MSDS) for this material.

### FIRST AID

#### EYES:

IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes, forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. IF IRRITATION PERSISTS GET MEDICAL ATTENTION.

#### SKIN:

Wash thoroughly with soap and water. Wash clothing before reuse. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

#### INHALATION:

Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, have a trained person administer artificial respiration. GET MEDICAL ATTENTION IMMEDIATELY.

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## 17. WARNING LABEL INFORMATION (Continued)

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### INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Have patient drink several glasses of water then induce vomiting by having patient tickle back of throat with finger. Keep airway clear. GET MEDICAL ATTENTION IMMEDIATELY.

### IN CASE OF SPILL OR LEAK:

Avoid discharges to sewers and streams.

Contain spill and pump into marked container for reclamation or disposal.

Small spills may be soaked up with compatible absorbent material and then placed in closed containers to await proper disposal.

### FIRE:

Use dry chemicals, foam, carbon dioxide.

Use water to keep fire-exposed containers cool.

Wear full protective clothing

### HANDLING AND STORAGE:

Wear safety glasses with side shields or chemical safety goggles.

Wear chemical resistant gloves such as North Silver Shield® or Viton®. For limited use, PVC or nitrile gloves may be worn. Silver Shield is a registered trademark of Siebe North, Inc. Viton is a registered trademark of E. I. DuPont deNemours and Company, Inc.

Store in a cool, dry, well ventilated area away from incompatible materials.

Keep container tightly closed and properly labeled.

Dike storage tanks separately to contain 110% of tank volume.

### DISPOSAL:

Recovered nonusable material is a RCRA Hazardous Waste. Treatment, storage, transportation and disposal must be in accordance with EPA and State regulations under the authority of the Resource Conservation and Recovery Act (RCRA) 40 CFR parts 260-271.

### INFORMATION REQUIRED BY FEDERAL, STATE OR LOCAL REGULATIONS:

#### This Product Contains:

CAS#	NAME
98-08-8	Benzene, (trifluoromethyl)-

VOC (g/l. by wt.): 1185

Contains no photochemically reactive material in accordance with Rule 443 of the South Coast Air Quality Management District.

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**17. WARNING LABEL INFORMATION (Continued)**

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HMIS RATING: HEALTH 2 FLAMMABILITY 3 REACTIVITY 1

LABEL NUMBER: 0996M7644

For Industrial Use Only