

Chlorobenzotrifluoride

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Chlorobenzotrifluoride**

Product Code(s) : Not available.

Recommended use of the chemical and restrictions on use

: Chemical intermediate.
Use pattern: Professional Use Only
Restriction on use: None known

Chemical family : Pure substance

Name, address, and telephone number of the supplier:

Chem synergy Inc.

1100 Burloak Drive
Suite 101
Burlington, ON, Canada
L7L 6B2

Supplier's Telephone # : 905-827-4900

24 Hr. Emergency Tel # : United States of America: Chemtrec 1-800-424-9300 (Within Continental U.S.);
Chemtrec 703-527-3887 (Outside U.S.). In Canada: (613) 996-6666 (CANUTEC)

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Aromatic odour.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification :

Flammable Liquid - Category 3

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Specific target organ toxicity, single exposure - Category 3 respiratory tract irritation

Label elements

Hazard pictogram(s)



Signal Word

WARNING!



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Hazard statement(s)

Flammable liquid and vapor.
May cause drowsiness or dizziness.
May cause respiratory irritation.

Precautionary statement(s)

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical and ventilating equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing mist or vapours.
Use only outdoors or in a well-ventilated area.
Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store in a well-ventilated place. Keep cool.
Store locked up.
Keep container tightly closed.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Other hazards which do not result in classification: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
p-Chlorobenzotrifluoride	PCBTF	98-56-6	100.00

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician if you feel unwell.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. If irritation or symptoms develop, seek medical attention. Wash contaminated clothing before re-use.
- Eye contact* : Immediately flush eyes with running water for at least 15 minutes. Obtain medical attention if irritation persists.



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Most important symptoms and effects, both acute and delayed

- : May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties. May cause central nervous system effects. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Direct eye contact may cause slight redness. Direct skin contact may cause slight or mild, transient irritation.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use water fog or fine spray, foams, carbon dioxide or dry chemical.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Flammable liquid and vapour. Vapors may travel considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable Liquids - Category 3

Hazardous combustion products

- : Carbon oxides

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Fight fires from a safe distance. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Individuals involved in the cleanup must wear appropriate personal protective equipment. For personal protection see section 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

- : Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with inert, non-combustible absorbent material (e.g. sand, vermiculite), then place material into open, unsealed containers. For waste disposal, see Section 13 of the SDS.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None.



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SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. Keep away from heat, sparks and open flame. - No smoking. Take precautionary measures against static discharges. Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Use only non-sparking tools. Avoid breathing mist or vapours. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Avoid contact with incompatible materials. Keep containers tightly closed when not in use.

Conditions for safe storage : Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials : Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
p-Chlorobenzotrifluoride	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Ensure adequate ventilation, especially in confined areas. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Use explosion-proof electrical and ventilating equipment.

Respiratory protection : Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection : Wear gloves impervious to this material. Advice should be sought from glove suppliers.

Eye / face protection : Wear eye/face protection. Safety glasses with side-shields or chemical splash goggles.

Other protective equipment : An eyewash station and safety shower should be made available in the immediate working area. Depending on conditions of use, an impervious apron should be worn. Other equipment may be required depending on workplace standards.

General hygiene considerations

: Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not ingest. Do not eat, drink or smoke when using this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear colourless liquid.
Odour : Aromatic.
Odour threshold : Not available.
pH : N/Av



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Melting/Freezing point : -33°C (-27.4°F)
Initial boiling point and boiling range
: 139.3°C (282.74°F)
Flash point : 43°C (109.4°F)
Flashpoint (Method) : Closed cup
Evaporation rate (BuAe = 1) : Not available.
Flammability (solid, gas) : Not applicable.
Lower flammable limit (% by vol.)
: No data available.
Upper flammable limit (% by vol.)
: No data available.
Oxidizing properties : None.
Explosive properties : Not explosive
Vapour pressure : Not available.
Vapour density : Not available.
Relative density / Specific gravity
: 1.33
Solubility in water : Slightly soluble.
Other solubility(ies) : No data available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: 3.7
Auto-ignition temperature : Not available.
Decomposition temperature : Not applicable.
Viscosity : Not available.
Volatiles (% by weight) : Not available.
Volatile organic Compounds (VOC's)
: N/Av
Absolute pressure of container
: N/Av
Flame projection length : N/Av
Other physical/chemical comments
: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under the recommended storage and handling conditions prescribed.
Possibility of hazardous reactions
: Hazardous polymerization will not occur.
Conditions to avoid : Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Avoid heat, open flames, sparks, static electricity and electrical equipment.
Incompatible materials : Incompatible materials (see Section 7).
Hazardous decomposition products
: None known, refer to hazardous combustion products in Section 5.



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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
 : NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May cause irritation of the nose, throat, mucous membranes, and respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause slight or mild, transient irritation.

Sign and symptoms eyes

: Direct eye contact may cause slight redness.

Potential Chronic Health Effects

: Prolonged or repeated skin contact may cause drying and irritation.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to have other reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Classification:

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
 Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory)
 May cause respiratory irritation. May cause drowsiness or dizziness.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: None known or reported by the manufacturer.

Toxicological data

: See below for toxicological data on the substance.

<u>Chemical name</u>	LC₅₀(4hr)	LD₅₀	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
p-Chlorobenzotrifluoride	33 mg/L 4 h	13 g/kg	>2000mg/kg



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Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Toxic to aquatic life with long lasting effects. Do not allow this material to drain into sewers/water supplies. See below for individual ingredient ecotoxicity.

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
p-Chlorobenzotrifluoride	98-56-6	3mg/L (Zebra fish)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
p-Chlorobenzotrifluoride	98-56-6	2mg/L (Daphnia magna)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
p-Chlorobenzotrifluoride	98-56-6	>0.41mg/L (Green algae)	0.41 mg/L (Green algae)	None.

Persistence and degradability

: Not expected to be rapidly biodegradable.

Bioaccumulation potential

: See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
p-Chlorobenzotrifluoride (CAS 98-56-6)	3.7 at 25 °C	121-202

Mobility in soil

: No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: See Section 7 (Handling and Storage) for further details. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.



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SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN2234	CHLOROENZOTRIFLUORIDES	3	III	
TDG Additional information	May be shipped as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass. This material may be shipped as an exempted marine pollutant in accordance with TDG Section 1.45.1 and Special Provision 99.				
49CFR/DOT	UN2234	CHLOROENZOTRIFLUORIDES	3	III	
49CFR/DOT Additional information	May be shipped as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass.				
IMDG	UN2234	CHLOROENZOTRIFLUORIDES	3	III	
IMDG Additional information	Consult the IMDG regulations for exceptions.				
ICAO/IATA	UN2234	Chlorobenzotrifluorides	3	III	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				

Special precautions for user : Keep away from heat, sparks and open flame. - No smoking.

Environmental hazards : This substance meets the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

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

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
p-Chlorobenzotrifluoride	98-56-6	Yes	None.	N/Av	No	No

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Flammable; Specific target organ toxicity, single exposure Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.



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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
p-Chlorobenzotrifluoride	98-56-6	No	N/Ap	No	No	No	No	No	No

Canadian Information:

WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product.

All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	New Zealand IOC
p-Chlorobenzotrifluoride	98-56-6	202-681-1	Present	Present	(3)-53	KE-05928	Present	HSR005269 (dilution)

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CNS: Central Nervous System
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- IUCLID: International Uniform Chemical Information Database
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NFPA: National Fire Protection Association
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PA: Pennsylvania
- PEL: Permissible exposure limit
- RCRA: Resource Conservation and Recovery Act
- RI: Rhode Island

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RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References



- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
- 2. International Agency for Research on Cancer Monographs, searched 2017
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2017(Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - 2017 version.
- 6. California Proposition 65 List - 2017 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2017.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p>Prepared for: Chemsynergy Inc 1100 Burloak Drive Suite 101 Burlington, ON, Canada, L7L 6B2 Direct all inquires to Chemsynergy 905-827-4900</p>	
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