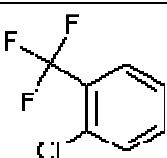


NAVIN FLUORINE INTERNATIONAL LTD		web: http://www.nfil.in mailto: speciality@nfil.in
		2nd Floor, Suntek Centre, 37/40, Subhash Road, Vile Parle (East), Mumbai-400057. India.

PRODUCT SPECIFICATION	
Title: 2-CHLORO BENZOTRIFLUORIDE (C ₇ H ₄ F ₃ Cl)	Document No. : NFIL/QC /SPEC/FP/021/00 Effective Date : 05/11/2008

Material Code	: SPE005027
Major Packing	: UN-Certified /MS-HDPE drum 200 / 250Kg
Storage Specifications	: Stored in dry condition at room temperature in well closed container.
Structural Formula	: 
Molecular Formula	: C ₇ H ₄ ClF ₃
Molecular Weight	: 180.55
Synonyms	: o-Chlorobenzotrifluoride; 2-Chloro(trifluoromethyl)benzene; Chlorobenzotrifluoride

Sr. No.	TEST	SPECIFICATION
Product Specification:		
1	Appearance / Description	Clear, Colorless liquid
2	Purity (By GC)	99.00% Min.
3	Moisture (By KF)	00.20% Max.
4	Total impurity	01.00% Max.

- Customer should discuss with business unit at speciality@nfil.in for the other requirements than specified.
- Analytical Method No. **NFIL/QC/WI/FP/021**



NAVIN FLUORINE
INTERNATIONAL LIMITED

MATERIAL SAFETY DATA SHEET (MSDS)

2-Chlorobenzotrifluoride

1. CHEMICAL IDENTITY

Chemical name	2-Chlorobenzotrifluoride
Synonym	Benzene, 1-Chloro-2-(Trifluoromethyl)-.
Chemical Formula	C ₇ H ₄ ClF ₃

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients Name	CAS No.: 88-16-4
	EC: 205-805-1

3. PHYSICAL / CHEMICAL DATA

Boiling Point	152°C @ 760mm Hg	Vapour Pressure	Not available.
Melting Point	-7.4 deg C	Solubility in water	immiscible
Vapour Density	6.27	Appearance	clear, colorless clear
Specific Gravity	1.3790g/cm ³	Odour	fish-like
pH	Not available.	Other	
Physical State	Clear liquid		

4. FIRE / EXPLOSION HAZARD DATA

Flammability	Yes	Flash Point	44 deg C.
Auto ignition temperature	650°C (1,202° F)	LEL	1.90 vol %
Explosion sensitivity to impact		UEL	
Explosion sensitivity to static electricity			
Hazardous Combustion products			
Hazardous Polymerization	Has not been reported		
Pyrophoric material		Corrosive	
Organic Peroxide		Oxidizer	
Explosive material		Other	
NFPA Rating (estimated)	Health: 2; Flammability: 2; Instability: 1		

5. STABILITY & REACTIVITY DATA

Chemical Stability	Stable at room temperature in closed containers under normal storage and handling conditions.
Incompatibility	Oxidizing agents
Conditions to avoid	Incompatible materials, ignition sources, excess heat, strong oxidants.
Hazardous reaction / decomposition products.	Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, hydrogen fluoride gas.

6. HEALTH HAZARD DATA

Effects of exposure / symptoms	<p>Eye: Causes eye irritation. May cause chemical conjunctivitis and corneal damage.</p> <p>Skin: Causes skin irritation. May be harmful if absorbed through the skin.</p> <p>Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated. Ingestion of large amounts may cause CNS depression. Ingestion of large amounts of fluoride may cause salivation, nausea, vomiting, abdominal pain, fever, labored breathing. Exposure to fluoride compounds can result in systemic toxic effects on the heart, liver, and kidneys. It may also deplete calcium levels in the body leading to hypocalcemia and death. Fluoride can reduce calcium levels leading to fatal hypocalcemia.</p> <p>Inhalation: Causes respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. Can produce delayed pulmonary edema. May cause burning sensation in the chest.</p> <p>Chronic: Chronic inhalation and ingestion may cause chronic fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Effects may be delayed. Chronic exposure to fluoride compounds may cause systemic toxicity.</p>
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7. TOXICOLOGICAL INFORMATION

LD 50 / LC 50

Oral, rat: LD50 = 1600 mg/kg;

Exposure Limit

2.5 mg/m³ TWA (as dust) (listed under Fluorides).

8. ECOLOGICAL INFORMATION

No information available.

9. PREVENTIVE MEASURES / EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Control

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.


Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

10. HANDLING & STORAGE

Normal handling	Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.	
Storage Recommendation	Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.	
11. EMERGENCY / FIRST AID MEASURES		
Fire	Fire Extinguishing Medium	For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.
Exposure / First Aid Measure	Skin	Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
	Eyes	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
	Ingestion	Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
	Inhalation	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.
Special Procedure	Treat symptomatically and supportively.	
12. ACCIDENTAL RELEASE MEASURE		
Spills/Leaks	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.	
13. DISPOSAL CONSIDERATIONS		
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.		

14. TRASPORT INFORMATION	
Proper shipping Name	CHLOROBENZOTRIFLUORIDES
Hazard Class	3
UN Number	UN2234
Packing Group	III
Hazard Label	
15. REGULATORY INFORMATION	
<p>European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols: XN Risk Phrases: R 10 Flammable. R 22 Harmful if swallowed. R 36/37/38 Irritating to eyes, respiratory system and skin. Safety Phrases: S 16 Keep away from sources of ignition - No smoking. S 24/25 Avoid contact with skin and eyes. S 33 Take precautionary measures against static discharges. S 37 Wear suitable gloves. S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S 9 Keep container in a well-ventilated place. S 28A After contact with skin, wash immediately with plenty of water</p>	
16. NAME OF FIRM - NAVIN FLUORINE INTERNATIONAL LIMITED	
Mailing address	Post Office - Bhestan, Surat, PIN 395 023, Gujarat, India
Telephone	+91-261-2890325 to 2890329
Fax	+91-261-2890288
DISCLAIMER	
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