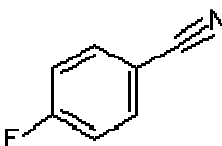


NAVIN FLUORINE INTERNATIONAL LTD		web: http://www.nfil.in mailto: speciality@nfil.in
		2nd Floor, Suntek Centre, 37/40, Subhash Road, Vile Parle (East), Mumbai-400057. India.

PRODUCT SPECIFICATION	
Title: 4 - FLUORO BENZONITRILE (C ₇ H ₄ FN)	Document No. : NFIL/QC /SPEC/FP/013/00 Effective Date : 05/11/2008

Material Code	: SPE005010
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 FN
Molecular Weight	: 121.11
Synonyms	: P-Fluorobenzonitrile; p-Cyanofluorobenzene

Sr. No.	TEST	SPECIFICATION
Product Specification:		
1	Appearance / Description	Colourless, solid/semi-solid.
2	Moisture (By KF)	00.50% Max.
3	Purity (By GC)	99.00% Min.
4	Total impurities	01.00% Max.

- Customer should discuss with business unit at speciality@nfil.in for the other requirements than specified.
- Analytical Method No. **NFIL/QC/QWI/FP/013**



NAVIN FLUORINE
INTERNATIONAL LIMITED

MATERIAL SAFETY DATA SHEET (MSDS)

4-Fluorobenzonitrile

1. CHEMICAL IDENTITY

Chemical name	4-Fluorobenzonitrile
Synonym	Benzonitrile, p-fluoro-; p-Cyanofluorobenzene; p-Fluorobenzonitrile
Chemical Formula	C ₇ H ₄ FN

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients Name	CAS No.: 1194-02-1
	EC No.: 214-784-9

3. PHYSICAL / CHEMICAL DATA

Boiling Point	188 deg C @ 750 mm Hg	Vapour Pressure	Not available.
Melting Point	33 - 36 deg C	Solubility in water	Not available.
Vapour Density	Not available.	Appearance	white
Specific Gravity	Not available.	Odour	None reported.
pH	Not available.	Other	
Physical State	Solid		

4. FIRE / EXPLOSION HAZARD DATA

Flammability	Yes	Flash Point	65°C(149° F)
Auto ignition temperature	Not available.	LEL	Not available.
Explosion sensitivity to impact		UEL	Not available.
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: 0		


5. STABILITY & REACTIVITY DATA

Chemical Stability	Stable under normal temperatures and pressures
Incompatibility	Strong oxidizing agents, strong acids, strong bases.
Conditions to avoid	Exposure to flame, heat.
Hazardous reaction / decomposition products.	Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, CO ₂ , cyanide fumes, hydrogen fluoride gas, fluoride fumes.

6. HEALTH HAZARD DATA

Effects of exposure / symptoms	<p>Eye: Causes eye irritation.</p> <p>Skin: Causes skin irritation. Harmful if absorbed through the skin. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. Most nitrile compounds are well absorbed through intact skin, and may cause delayed onset of symptoms following exposure by this route.</p> <p>Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. Metabolism may release cyanide, which may result in headache,</p>
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	dizziness, weakness, collapse, unconsciousness and possible death.	
	<p>Inhalation: Harmful if inhaled. May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. Inhalation may result in symptoms similar to cyanide poisoning which include tachypnea, hyperpnea (abnormally rapid or deep breathing), and dyspnea (labored breathing) followed rapidly by respiratory depression. Pulmonary edema may occur.</p> <p>Chronic: May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation of the upper respiratory tract and eyes.</p>	
7. TOXICOLOGICAL INFORMATION		
LD 50 / LC 50	Oral, mouse: LD50 = >300 mg/kg;	
Exposure Limit		
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 ventilation to keep airborne concentrations low.	
Personal Protective Equipment	<p>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.</p> <p>Skin: Wear appropriate protective gloves to prevent skin exposure.</p> <p>Clothing: Wear appropriate protective clothing to prevent skin exposure.</p> <p>Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.</p>	
10. HANDLING & STORAGE		
Normal handling	Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Keep away from heat and flame.	
Storage Recommendation	Keep away from heat and flame. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.	
11. EMERGENCY / FIRST AID MEASURES		
Fire	Fire Extinguishing Medium	Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Exposure / First Aid Measure	Skin	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
	Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid
	Ingestion	If swallowed, do not induce vomiting unless directed to

		do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
	Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Special Procedure	Treat symptomatically and supportively.	
12. ACCIDENTAL RELEASE MEASURE		
Spills/Leaks	Wash area with soap and water. Sweep up, then place into a suitable container for disposal. Remove all sources of ignition. Provide ventilation.	
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. TRANSPORT INFORMATION		
Proper shipping Name	TOXIC SOLIDS, ORGANIC, N.O.S.	
Hazard Class	6.1	
UN Number	UN2811	
Packing Group	III	
Hazard Label		
15. REGULATORY INFORMATION		
European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols: XN Risk Phrases: R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R 36/37/38 Irritating to eyes, respiratory system and skin. Safety Phrases: S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.		
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	
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