



MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification

1.1 Product identifiers

Product Name : 1-Fluoro-4-nitrobenzene
Cat No.: AC119490000; AC119490050; AC119491000; AC119495000
CAS No. : 350-46-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended uses : Laboratory chemicals
Uses advised against: Food, drug, pesticide or biocidal product use.

1.3 Details of the supplier of the safety data sheet

Company : Krishna Solvechem Limited.
B/503, Sahayog, S. V. Road,
Kandivali (West), Mumbai – 400067. India.
Telephone : +91-22-6123 0222
Email : exports@kscl.co.in

1.4 Emergency telephone number

Emergency Phone : +91-8657457330

SECTION 2: Hazards identification

2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral and dermal toxicity	(Category 4)
Skin Corrosion/Irritation	(Category 2)
Serious Eye Damage/Eye Irritation	(Category 2)
Specific target organ toxicity (single exposure)	(Category 3)
Target Organs - Respiratory system.	
Specific target organ toxicity – (repeated exposure)	(Category 2)
Target organs – Gastrointestinal tract	

2.2 Label elements

Pictogram :



Signal word Danger

Hazard statement (s) Harmful if swallowed, in contact with skin or if inhaled



Precautionary statement (s)

Causes skin irritation
Causes serious eye irritation
Toxic if inhaled
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Do not eat, drink or smoke when using this product

Inhalation :

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call a POISON CENTER or doctor/physician if you feel unwell

IF ON SKIN (or hair):

If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Ingestion:

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Storage:

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



	Disposal: Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)	None identified

SECTION 3: Composition / information on ingredients

3.1

Component	CAS-No	Weight %
Benzene,1-fluoro-4-nitro	350-46-9	>95

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhalation :	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
In case of skin contact :	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
In case of eye contact :	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Ingestion :	Do NOT induce vomiting. Clean mouth with water. Get medical attention
4.2 Most important symptoms and effects :	No information available
4.3 Notes to Physician :	Treat symptomatically

SECTION 5: Firefighting effects

5.1 Extinguishing media

Suitable extinguishing media :	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media: :	No information available
5.2 Flash Point :	83 °C / 181.4 °F
Method :	No information available



Autoignition Temperature:	No information available
Explosion Limits:	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available
Specific Hazards Arising from the Chemical :	Flammable. Combustible material. Combustible material. Containers may explode when heated.
Hazardous Combustion Products :	Carbon monoxide (CO). Carbon dioxide (CO ₂). Nitrogen oxides(NO _x). Gaseous hydrogen fluoride(HF)

5.4 Protective Equipment and Precautions for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.			
<u>NFPA:</u>	Health	Flammability	Instability	Physical hazards
	3	1	0	N/A

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
Remove all sources of ignition. Take precautionary measures against static discharges
- 6.2 Environmental precautions**
See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.
- 6.3 Methods and materials for containment and cleaning up**
Sweep up and shovel into suitable containers for disposal. Remove all sources of ignition.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling**
Do not breathe dust. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use only in well-ventilated areas. Keep away from open flames, hot surfaces and sources of ignition.



7.2 Conditions for safe storage

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong bases.

SECTION 8: Exposure controls/personal protection

8.1 Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

8.2 Exposure controls

Personal protective equipment -

Eye / Face protection

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 protection and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice..

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Dark yellow solid
b) Odour	Odorless
c) Odour Threshold	No information available
d) pH	No information available
e) Melting point / freezing point	27 °C / 80.6 °F
f) Initial boiling point and	205 - 216 °C / 401 - 420.8 °F



boiling range	
g) Flash point	83 °C / 181.4 °F
h) Evaporation rate	Not applicable
i) Flammability (solid, gas)	No information available
j) Upper/lower flammability or explosive limits	No data available No data available
k) Vapour pressure	5.5 mmHg @ 70 °C
l) Vapour density	Not applicable
m) Specific Gravity	1.330
n) Solubility	No information available
o) Partition coefficient: n octanol/water	No data available
p) Auto-ignition temperature	No information available
q) Decomposition temperature	No information available
r) Viscosity	Not applicable
s) Molecular formula	C6 H4 F N O2
t) Molecular Weight	141.1

SECTION 10: Stability and Reactivity

10.1 Reactive Hazard :	None known, based on information available
10.2 Chemical stability :	Stable under normal conditions.
10.3 Possibility of hazardous reactions :	None under normal processing.
10.4 Conditions to avoid :	Keep away from open flames, hot surfaces and sources of ignition. Incompatible products.
10.5 Incompatible materials:	Strong oxidizing agents, Strong bases
10.6 Hazardous decomposition products :	Carbon monoxide (CO), Carbon dioxide (CO ₂), Nitrogen oxides, gaseous hydrogen fluoride
10.7 Hazardous Polymerization	Hazardous polymerization does not occur



SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute toxicity:

Product Information:

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzene, 1-fluoro-4-nitro-	Not listed	Not listed	LC50 = 2600 mg/m ³ (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation : No information available

Sensitization: No information available

Carcinogenicity : The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Benzene, 1-fluoro-4-nitro-	350-46-9	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: Ames test: positive

Reproductive Effects: No information available.

Developmental Effects : No information available.

Teratogenicity: No information available.

STOT - single exposure : Respiratory system

STOT - repeated exposure: Gastrointestinal tract (GI)

Aspiration hazard : No information available.

Symptoms / effects, both acute and delayed: No information available

Endocrine Disruptor Information : No information available

Other Adverse Effects : The toxicological properties have not been fully investigated.



SECTION 12: Ecological information

12.1

Ecotoxicity:

Do not empty into drains. Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Benzene, 1-fluoro-4-nitro-	Not listed	LC50: 26.6 - 30.4 mg/L, 96h flow-through (Pimephales promelas)	Not listed	Not listed

12.2 Persistence and degradability: Persistence is unlikely

Bioaccumulation/ Accumulation No information available

12.3 Mobility: Is not likely mobile in the environment due its low water solubility.

SECTION 13: Disposal considerations

13.1 Waste treatment methods: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

14.1 UN number :

DOT : UN2811 TDG : UN2811
IATA : UN2811 IMDG : UN2811

14.2 UN proper shipping name

IMDG : Toxic solid, organic, n. o. s.

IATA : TOXIC SOLID, ORGANIC, N. O. S.

14.3 Transport hazard class(es) DOT: 6.1 TDG: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packaging group: DOT: III TDG: III IMDG: III IATA: III

SECTION 15: Regulatory information

15.1 United states of America Inventory:

Component	CAS-No	TSCA	TSCA Inventory notification Active/Inactive	TSCA - EPA Regulatory Flags
Benzene,1-fluoro-4-nitro-	350-46-9	X	ACTIVE	-

Legend:



TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories:

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Benzene, 1-fluoro-4-nitro-	350-46-9	-	X	206-502-8	X	X	X	X	X	-

U.S. Federal Regulations

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals.

15.2 U.S. State Right-to-Know Regulations:

Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N



U.S. Department of Homeland Security - This product does not contain the any DHS Chemicals.

Other International Regulations

Mexico – Grade No information available

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Benzene, 1-fluoro-4-nitro-	350-46-9	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Benzene, 1-fluoro-4-nitro-	350-46-9	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 16: Other information

16.1 Prepared By: Regulatory affairs
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Revision Summary: This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 C F R 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

16.2 Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.