MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification

1.1 Product identifiers

Product Name : **2,4-Difluoroaniline**

Cat No.: **AC114590000; AC114590100; AC114590250; AC114591000**

CAS No. : 367-25-9

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)

Flammable liquids	(Category 4)
Acute oral toxicity	(Category 4)
Acute dermal toxicity	(Category 3)
Acute inhalation toxicity - vapors	(Category 3)

2.2 Label elements

Pictogram :

Signal word Danger

Hazard statement (s) Toxic in contact with skin or if inhaled

Combustible liquid
Harmful if inhaled

Precautionary statement (s)

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep cool

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

Ingestion:
IF SWALLOWED: Call a POIUSON CENTER or doctor/physician if you feel unwell. Rinse mouth

Fire
In case of fire: Use CO_2, dry chemical, or foam for extinction

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 %
Benzeneamine, 2,4-difluoro-	367-25-9	>95

SECTION 4: First aid measures

4.1	**Description of first aid measures**	
	General Advice:	If symptoms persist, call a physician.
	If inhalation :	Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.Immediate medical attention is required.
	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. Call a physician or poison control center immediately
4.2	**Most important symptoms and effects :**	Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
4.3	**Notes to Physician :**	Treat symptomatically

SECTION 5: Firefighting effects

5.1	**Extinguishing media**	
	Suitable extinguishing media :	Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
	Unsuitable Extinguishing Media: :	No information available
5.2	**Flash Point :** **Method :**	62 °C / 143.6 °F No information available

	Autoignition Temperature:	600 °C / 1112 °F
	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 :	Combustible material. Flammable. Containers may explode when heated.
	Hazardous Combustion Products :	Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO2). Hydrogen fluoride.
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.

NFPA:

Health	Flammability	Instability	Physical hazards
3	2	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sourcesof ignition. Take precautionary measures against static discharges.

6.2 Environmental precautions

Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition.

7.2	Conditions for safe storage
	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away fromheat, sparks and flame. To maintain product quality: Keep refrigerated. Incompatible Materials. Acids. Strong bases. Strong reducing agents. Acid anhydrides. Acid chlorides.Chloroformates. Oxidizing agent.

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 stationsand 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 StandardEN 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	Brown Liquid
b) Odour	No information available
c) Odour Threshold	No information available
d) pH	No information available
e) Melting point / freezing point	-7.5 °C / 18.5 °F
f) Initial boiling point and	170 °C / 338 °F @ 753 mmHg

boiling range	
g) Flash point	62 °C / 143.6 °F
h) Evaporation rate	No information available
i) Flammability (solid, gas)	Not applicable
j) Upper/lower flammability or explosive limits	No data available No data available
k) Vapour pressure	6.9 hPa @ 5 0 °C
l) Vapour density	4.45
m) Specific Gravity	1.268
n) Solubility	Immiscible with water
o) Partition coefficient: n octanol/water	No data available
p) Auto-ignition temperature	600 °C / 1112 °F
q) Decomposition temperature	> 500°C.
r) Viscosity	No information available
s) Molecular formula	C6 H5 F2 N
t) Molecular Weight	129.11

SECTION 10: Stability and Reactivity

10.1	**Reactive Hazard :**	None known, based on information available
10.2	**Chemical stability :**	Light sensitive
10.3	**Possibility of hazardous reactions :**	No information available
10.4	**Conditions to avoid :**	Keep away from open flames, hot surfaces and sources of ignition. Exposure to light. Incompatible products.
10.5	**Incompatible materials:**	Acids, Strong bases, Strong reducing agents, Acid anhydrides, Acid chlorides, Chloroformates, Oxidizing agent
10.6	**Hazardous decomposition products :**	Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen fluoride
10.7	**Hazardous Polymerization**	No information available

SECTION 11: Toxicological information

11.1

Information on toxicological effects

Acute toxicity:

Product Information:

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzenamine, 2,4-difluoro-	LD50 = 820 mg/kg (Rat)	LD50 = 0.8 mL/kg (Rat)	LC50 = 6210 mg/m3 (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 ha Any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Benzeneamine, 2,4-difluoro-	367-25-9	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: No information available.

Reproductive Effects: No information available.

Developmental Effects : No information available.

Teratogenicity: No information available.

STOT - single exposure : None known

STOT - repeated exposure: None known

Aspiration hazard : No information available.

Symptoms / effects,both acute and delayed: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

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.
12.2 Persistence and degradability:	Based on information available. May persist
Bioaccumulation/ Accumulation	No information available
12.3 Mobility:	Will likely be mobile in the environment due to its water solubility. 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 : UN2941 TDG : UN2941

IATA : UN2941 IMDG : UN2941

14.2 UN proper shipping name

DOT :	FLUOROANILINES
TDG :	FLUOROANILINES
IMDG :	FLUOROANILINES
IATA :	FLUOROANILINES

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
Benzeneamine, 2,4-difluoro-	367-25-9	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
Benzenamine, 2,4-difluoro-	367-25-9	-	X	206-687-5	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)
Benzenamine, 2,4-difluoro-	367-25-9	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantitiesfor Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantitiesfor Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Benzenamine, 2,4-difluoro-	367-25-9	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 16: Other information

16.1 Prepared By: Regulatory affairs
Krishna Solvechem Limited

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Creation Date: 23-Mar-2012
Revision Date: 19-Jan-2023
Print Date: 19-Jan-2023
Revision Summary: This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under29 C F R 1910.1200 to align with the Globally Harmonized System ofClassification 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.