



<b>MATERIALS SAFETY DATA SHEET (MSDS) Carbazole (C<sub>12</sub>H<sub>9</sub>N )</b>	MSDS Number:	
	Version number:	
	Date issued:	
	Page No:	

## 1. Product Identification

Product Name	Carbazole
Synonyms	9-Azafluorene; Dibenzopyrrole; Diphenylenimine
CAS No	86-74-8
Recommended Use	Laboratory chemicals, Industrial & for professional use only.

## Manufacturer/Importer/Supplier/Distributor information

Manufacturer Supplier	
E-Mail	
Contact Person	Entity 1   Made by India
Emergency Telephone	

## 2. Hazard(s) identification



### Classification

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

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2



Specific target organ toxicity (single exposure) Target Organs - Respiratory system.	Category 3
--	------------

<b>Label Elements</b>	 
<b>Signal Word</b>	<b>Warning</b>
<b>Hazard Statements</b>	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer
<b>Precautionary Statements</b>	
<b>Prevention</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands and any exposed skin thoroughly after handling. Wear eye/face protection. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.
<b>Response</b>	IF exposed or concerned: Get medical attention/advice.
<b>Inhalation</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
<b>Skin</b>	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
<b>Eyes</b>	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.
<b>Storage</b>	Store locked up. Store in a well-ventilated place. Keep container tightly closed.
<b>Disposal</b>	Dispose of contents/container to an approved waste disposal plant.
<b>Hazards not otherwise classified (HNOC)</b>	Very toxic to aquatic life with long lasting effects.



### 3. Composition and ingredient information

Chemical name	CAS number	%
Carbazole	86-74-8	4

### 4. First-aid measures

<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.
<b>Ingestion</b>	Remove from exposure, lie down. Remove to fresh air. Get medical attention.
<b>Inhalation</b>	Clean mouth with water. Get medical attention.

### 5. Fire-fighting measures

<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Chemical foam.
<b>Unsuitable extinguishing media</b>	water jet
<b>Special hazards arising from the substance or mixture</b>	Combustible.
<b>Hazardous combustion products</b>	In case of fire may be liberated: Nitrogen oxides (NO <sub>x</sub> ), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
<b>Advice for firefighters</b>	In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

### 6. Accidental Release Measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the Environment must be avoided.



<b>Methods and materials for containment and cleaning up</b>	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
--	--

## 7. Handling and storage

<b>Handling</b>	Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation.
<b>Storage.</b>	Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Strong oxidizing agents. Strong bases.

## 8. Exposure Control / Personal Protection

<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure Limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Personal Protective Equipment</b>	
<b>Eye/face Protection</b>	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.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	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.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	Melting point/range: 243 - 246 °C
Initial boiling point and boiling range	355 °C
Flash point	220.0 °C - closed cup



Evaporation rate	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure at 323 °C	533 hPa
Vapour density	No data available
Relative density at 18 °C	1.1 g/cm <sup>3</sup>
Water solubility at 25 °C	0.00091 g/l
Partition coefficient :n-octanol/water	log Pow: 3.72 at 22 °C
Auto-ignition temperature	> 600 °C at 1.013 hPa
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

## 10. Stability and reactivity

<b>Reactivity</b>	The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.
<b>Chemical stability</b>	The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
<b>Possibility of hazardous reactions</b>	Violent reaction with: strong oxidiser, Alkalis
<b>Conditions to avoid</b>	Incompatible products.
<b>Incompatible materials</b>	Strong oxidizing agents, Strong bases.
<b>Hazardous decomposition products</b>	Nitrogen oxides (NO <sub>x</sub> ), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )

## 11. Toxicological information

### Acute Toxicity

#### Product Information - Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Carbazole	>5000 mg/kg ( Rat )	Not listed	Not listed



<b>Toxicologically Synergistic Products</b>	No information available
<b>Delayed and immediate effects as well as chronic effects from short and long-term exposure</b>	
<b>Irritation</b>	No information available.
<b>Sensitization</b>	No information available.
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH
Carbazole	86-74-8	Group 2B	Not listed	Not listed

### IARC (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

<b>Mutagenic Effects</b>	Not mutagenic in AMES Test
<b>Reproductive Effects</b>	No information available.
<b>Developmental Effects</b>	No information available.
<b>Teratogenicity</b>	No information available.
<b>STOT - single exposure</b>	Respiratory system
<b>STOT - repeated exposure</b>	None known
<b>Aspiration hazard</b>	No information available
<b>Symptoms / effects, both acute and delayed</b>	No information available
<b>Endocrine Disruptor Information</b>	No information available
<b>Other Adverse Effects</b>	The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

## 12. Ecological information

### Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.



Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Carbazole	Not listed	Not listed	EC50 = 10.6 mg/L 15 min EC50 = 11.6 mg/L 30 min EC50 = 13.6 mg/L 5 min	Not listed

<b>Persistence and Degradability</b>	Insoluble in water Persistence is unlikely
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Carbazole	3.84

### 13. Disposal considerations

<b>Waste treatment methods</b>	This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Sewage disposal-relevant information</b>	Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.
<b>Waste treatment of containers/packaging</b>	It is a dangerous waste; only packaging's which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.
<b>Relevant provisions relating to waste</b>	The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Entity 1 | Made by India

#### Remarks:

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

### 14. Transport information

	DOT	TDG	IATA	IMDG/IMO
<b>UN number</b>	UN3077	UN3077	UN3077	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substances	Environmentally hazardous substances	Environmentally hazardous substances	Environmentally hazardous substances
<b>Hazard class</b>	9	9	9	9
<b>Packing group</b>	III	III	III	III



## 15. Regulatory information

<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
<b>Chemical safety assessment</b>	For this product a chemical safety assessment was not carried out.

## 16. Other information

### History

<b>Product name</b>	
<b>Product code</b>	
<b>Date of printing</b>	
<b>Date of issue/Date of revision</b>	
<b>Date of previous issue</b>	
<b>Version</b>	
<b>Prepared by</b>	

## 17. Change Details

Entity 1 | Made by India