

CARBOLIC ACID (PHENOL)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

CARBOLIC ACID (PHENOL)
Phenol; Hydroxybenzene; Phenylic acid
CAS: 108-95-2

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: chemical intermediate for resins (phenolic/epoxy), disinfectants, dyes, pharmaceuticals and plasticizers; laboratory reagent. For industrial user only. For industrial/commercial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
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1.4 Emergency phone number:

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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Muta. 2	Germ cell mutagenicity, Category 2, H341
Acute Tox. 3	Acute oral toxicity, Category 3, H301
Acute Tox. 3	Acute dermal toxicity, Category 3, H311
Acute Tox. 3	Acute inhalation toxicity, Category 3, H331
STOT RE 1	Specific target organ toxicity, repeated exposure, Category 1, H372
Skin Corr. 1B	Skin corrosion, Category 1B, H314

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

H301 – Toxic if swallowed.
H311 – Toxic in contact with skin.
H314 – Causes severe skin burns and eye damage.
H331 – Toxic if inhaled.
H341 – Suspected of causing genetic defects.
H372 – Causes damage to organs through prolonged or repeated exposure.

Precautionary statements:

P201: Obtain special instructions before use.
P260: Do not breathe dust/fume/vapours.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352: IF ON SKIN: Wash with plenty of water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311: IF exposed: Call a POISON CENTER/doctor.
P321: Specific treatment (see first aid measures).
P361+P364: Take off immediately all contaminated clothing and wash it before reuse.
P405: Store locked up.
P501: Dispose of the contents/containers to a licensed hazardous waste contractor.

2.3 Other hazards which do not result in classification:

Not relevant

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Phenol (Carbolic Acid)
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 108-95-2	Phenol (Carbolic Acid) — Muta. 2: H341; Acute Tox. 3: H301, H311, H331; STOT RE 1: H372; Skin Corr. 1B: H314 – Danger	≥99% (technical/crystalline grade)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:
Request medical assistance immediately, showing the SDS of this product.

By inhalation:
Remove the person affected from the area of exposure immediately, provide fresh air and keep at rest. Administer artificial respiration/oxygen if needed by trained personnel. Get immediate medical attention (H331).

By skin contact:
Remove contaminated clothing immediately (avoid delay). Wash/shower affected skin with copious amounts of water for at least 15 minutes; polyethylene glycol 300/400 may be used by trained personnel as a decontaminant where available. Get immediate medical attention (H311/H314).

By eye contact:
Rinse eyes immediately and thoroughly with lukewarm water for at least 15–20 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Get immediate medical attention (H314).

By ingestion/aspiration:
Do NOT induce vomiting (risk of aspiration and further burns). Rinse mouth with water if the person is conscious. Get immediate medical attention (H301).

4.2 Most important symptoms/effects, acute and delayed:
Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:
Phenol is rapidly absorbed through intact skin; decontamination must be immediate and thorough. Treat as a systemic poison and chemical burn; specialist medical management is required.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:
Suitable: Water spray/fog, dry chemical powder, foam, carbon dioxide
Unsuitable: High-pressure water jet (may spread molten/liquid product)

5.2 Specific hazards arising from the chemical:
Combustible solid (flash point ~79°C). Combustion produces carbon monoxide, carbon dioxide and irritant/toxic fumes. Molten phenol can cause severe burns.

5.3 Special protective actions for fire-fighters:
Wear self-contained breathing apparatus and full chemical-resistant protective clothing. Cool fire-exposed containers with water spray from a safe distance. Avoid contact with molten or dissolved product.

Additional provisions:
Use water spray to cool fire-exposed containers. Prevent fire-fighting water from entering drains or watercourses. Approach the fire from upwind where possible.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
For non-emergency personnel:
Evacuate the area. Only trained personnel with appropriate PPE (section 8) should attempt containment.

For emergency responders:
Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:
Prevent product from entering drains, watercourses or soil (toxic to aquatic life). Notify the relevant authority in case of significant release.

6.3 Methods and materials for containment and cleaning up:
Absorb with inert absorbent material (sand, vermiculite) avoiding skin contact; collect in suitable, labelled, closed containers for disposal. Do not flush to drains.

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:
A. General precautions for safe use:
Avoid all contact with skin, eyes and clothing; avoid breathing dust/vapour/fume. Handle in a well-ventilated area or under local exhaust ventilation.
B. Technical recommendations for the prevention of fires and explosions:
Keep away from ignition sources and strong oxidising agents. Bond/ground equipment when transferring molten or dissolved product.
C. Technical recommendations on general occupational hygiene:
Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly and immediately after any contact, and before breaks.
D. Technical recommendations to prevent environmental risks:
Prevent release to drains, watercourses and soil; bund storage/handling areas where appropriate.

7.2 Conditions for safe storage, including any incompatibilities:
A. Specific storage requirements:

Minimum Temp.	15°C
Maximum Temp.	30°C
Maximum time	24 Months

B. General conditions for storage:
Store in a cool, dry, well-ventilated, locked area in tightly closed original containers, away from oxidising agents, strong bases and incompatible materials (see section 10.5), and away from sources of ignition. For additional information see subsection 10.5.

7.3 Specific end use(s):
Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:
Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):

Identification	Occupational Exposure Limit Type	Value
Phenol CAS: 108-95-2	Time Weighted average concentration (8 hrs), skin notation	5 ppm / 19 mg/m³ (Sk)

8.2 Appropriate engineering controls:
It is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding occupational exposure limits, in addition to individual protective equipment (PPE) as needed. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE. Provide local exhaust ventilation at all points of vapour/dust generation given the skin-notation and systemic toxicity of this substance.

B. Respiratory protection:
Use an air-purifying respirator with an organic vapour cartridge for short, low-level exposures; use self-contained breathing apparatus for high concentrations or emergency response.

C. Specific protection for the hands:
Chemical-resistant gloves impervious to phenol (e.g., butyl rubber, Viton); nitrile and natural rubber are not recommended for prolonged contact. Replace immediately if contaminated.

D. Eye and face protection:

Chemical splash goggles and a face shield (H314 – severe eye damage hazard).

E. Bodily protection:

Full chemical-resistant protective clothing (e.g., butyl rubber or equivalent) covering all exposed skin; phenol is rapidly absorbed through intact skin.

F. Additional emergency measures:

Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available.

Environmental exposure controls:

Avoid environmental spillage of both the product and its container. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (crystals); liquefies above ~41°C
Appearance	Crystalline solid/needles
Color	Colourless to light pink (darkens on exposure to air/light)
Odor	Sweet, medicinal/tarry
Odour threshold	~0.04–0.06 ppm (literature)
Volatility	
Boiling point at atmospheric pressure	181.7°C
Vapour pressure at 20°C	~0.2 hPa (literature)
Evaporation rate at 20°C	Slow (relative to n-butyl acetate)
Product Description	
Density / Relative density at 20°C	1.07 g/cm³
Dynamic / Kinematic viscosity	~3.4 mPa·s (molten, at 45°C; literature)
Concentration	See section 3
pH	~5–6 (saturated aqueous solution, weakly acidic; literature)
Vapour density at 20°C	3.24 (air = 1)
Partition coefficient n-octanol/water 20°C	log Pow ~ 1.46 (literature)
Solubility in water at 20°C	~83 g/L (literature)
Decomposition temperature	Not established (combustible – see section 5)
Melting point/freezing point	40.5°C
Flammability	
Flash Point	~79°C (closed cup, literature)
Flammability (solid, gas)	Combustible solid
Autoignition temperature	~715°C (literature)
Lower / Upper flammability limit	1.7% – 8.6% v/v (literature)
Particle Characteristics	
Median equivalent diameter	Non-applicable

* Not relevant due to the nature of the product, not providing information on the properties of its hazards.

9.2 Other information:

Explosive properties	Not relevant (non-explosive)
Oxidising properties	Non-oxidising
Corrosive to metals	Not generally corrosive to common metals; mildly corrosive to some plastics/rubbers
Heat of combustion	~32.5 kJ/g (literature)
Surface tension at 20°C	Not established
Refraction index	1.542 (molten, literature)

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Reacts with strong oxidising agents, sometimes violently. Reacts with strong bases to form phenolates. Corrosive to some metals and plastics.

10.2 Chemical stability:

Chemically stable under recommended storage conditions; darkens on prolonged exposure to air and light.

10.3 Possibility of hazardous reactions:

Violent or exothermic reactions may occur with strong oxidising agents (e.g., nitric acid, peroxides), strong bases and aluminium chloride under certain conditions.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Slow oxidation/discolouration	Danger of fire above flash point	Avoid prolonged exposure (discolouration)	Absorbs moisture slowly; avoid contact with water for concentrated storage

10.5 Incompatible materials:

Strong Oxidising Agents	Strong Bases	Amines	Aluminium Chloride
Avoid contact (may be violent)	Avoid contact	Avoid contact	Avoid contact

10.6 Hazardous decomposition products:

Carbon monoxide, carbon dioxide and irritant/toxic organic fumes on combustion/thermal decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

- A. Ingestion (acute effect):**
Toxic if swallowed (H301); causes severe burns to the mouth, throat and gastrointestinal tract; systemic absorption can cause central nervous system depression, cardiac arrhythmia and organ damage.
- B. Inhalation (acute effect):**
Toxic if inhaled (H331); vapour/dust is corrosive and irritating to the respiratory tract; systemic absorption may occur.
- C. Contact with skin and eyes (acute effect):**
Causes severe skin burns (H314) and is toxic in contact with skin (H311) due to rapid dermal absorption, which can cause systemic poisoning even from relatively small exposed areas. Causes serious eye damage.
- D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):**
Suspected of causing genetic defects (Muta. 2, H341). Classification criteria for carcinogenicity and reproductive toxicity are not met based on available data. IARC: Group 3 (not classifiable as to carcinogenicity to humans).
- E. Sensitizing effects:**
Classification criteria for respiratory or skin sensitisation are not met based on available data.
- F. Specific target organ toxicity (STOT) – single exposure:**
Corrosive/systemic acute effects are covered under sections 11.A–C; not separately classified as STOT-SE.
- G. Specific target organ toxicity (STOT) – repeated exposure:**
Causes damage to organs (liver, kidney, central nervous system) through prolonged or repeated exposure (STOT RE 1, H372).
- H. Aspiration hazard:**
Not relevant (solid product; molten/dissolved forms present ingestion/aspiration hazard as per H301).

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Phenol CAS: 108-95-2	LD50 oral: 317 mg/kg (literature)	Rat
	LD50 dermal: 850 mg/kg (literature)	Rabbit
	LC50 inhalation: ~316 mg/m³ (4h, literature)	Rat

SECTION 12: ECOLOGICAL INFORMATION

Harmful to aquatic life; toxic to fish, aquatic invertebrates and algae at relatively low concentrations.

12.1 Toxicity:

Identification	Acute Toxicity	Genus
Phenol CAS: 108-95-2	LC50 (96h): ~10–25 mg/L (literature range)	Fish
	EC50 (48h): ~10 mg/L (literature range)	Crustacean (Daphnia)

12.2 Persistence and degradability:

Readily biodegradable under standard aerobic test conditions (literature); however acutely toxic to the microorganisms used in biological wastewater treatment at elevated concentrations.

12.3 Bioaccumulative potential:

Low bioaccumulation potential (log Pow ~1.46); not expected to bioaccumulate significantly.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Low–moderate	Low	Mobile (moderately soluble)	Mobile

12.5 Results of PBT and vPvB assessment:

Does not meet the PBT/vPvB criteria based on available data (not persistent or highly bioaccumulative).

12.6 Other adverse effects:

Toxic to aquatic organisms and to microorganisms in biological wastewater treatment plants; avoid any release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Do not discharge to drains, watercourses or soil. Collect spills/waste in suitable, labelled, closed containers and dispose of via a licensed hazardous waste contractor (e.g., by high-temperature incineration with flue gas scrubbing) in accordance with local regulations. Empty containers may retain hazardous residue.
Refer to national and local regulations on waste management (Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016, as amended).

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	UN1671
14.2 UN proper shipping name	PHENOL, SOLID
14.3 Transport hazard class(es)	6.1
14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	UN1671
14.2 UN proper shipping name	PHENOL, SOLID
14.3 Transport hazard class(es)	6.1
14.4 Packing group	II
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: F-A, S-A
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	UN1671
14.2 UN proper shipping name	PHENOL, SOLID
14.3 Transport hazard class(es)	6.1

14.4 Packing group	II
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product. Insecticides Act 1968 and Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 are of particular relevance given the acute toxicity and corrosivity of this substance.

Other legislation:

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H314: Causes severe skin burns and eye damage.
H331: Toxic if inhaled.
H341: Suspected of causing genetic defects.
H372: Causes damage to organs through prolonged or repeated exposure.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

United Nations GHS (Rev. 8); ECHA Classification & Labelling Inventory; publicly available peer-reviewed and regulatory toxicological/ecotoxicological literature for this CAS number.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET