

# PHENOL

## PRODUCT INFORMATION

### General

PHENOL is a clear, colorless and light pink solid or thick liquid, prone to reddish on exposure to air and light, hastened by presence of alkalinity. It has characteristic odor and absorbs water from the air. The principal use of PHENOL is for resins, especially for PHENOL-formaldehyde thermosetting resins. The PHENOL of KUMHO is produced by the oxidation of cumene.

**IUPAC name:** PHENOL

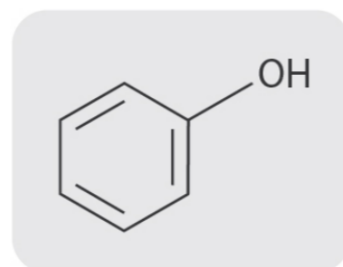
**Synonyms:** Carbolic acid, Benzenol, Hydroxybenzene, Phenic acid, Momophenol, Oxybenzene

**Molecular formula:** C<sub>6</sub>H<sub>6</sub>O

**CAS number:** 108-95-2

**EINECS/ELINCS number:** 203-632-7

**Package:** 200 kg / 200 l Zn-coated steel drum, bulk



### Sales Specification

Appearance	Clear
Purity(dry), wt.%	99.96 Min.
Molten color, Pt/Co	10 Max.
Solidification point, °C	40.7 Min.
Iron contents, wt.ppm	0.10 Max.

### Typical Properties

Molecular weight	94.11
Appearance	Solid : white crystalline mass Liquid (above 41 °C) : colorless
Odor	Characteristic
Boiling point, °C	182
Melting point, °C	41
Flash point, °C	79
Autoignition temperature, °C	715
Vapour pressure @ 25°C, mmHg	(Solid) 0.35
Vapour density (air = 1)	3.2

### Uses

The main use of PHENOL is in phenolic resins which are any of several types of synthetic thermosetting resins. These resins are obtained from the reaction of PHENOL.

PHENOL-formaldehyde resins are the major resins in this class. PHENOL is also used to produce bisphenol-A, a chemical intermediate of epoxy and polycarbonate resins. Other uses for PHENOL are diversified, as other chemical intermediates.

Viscosity @ 80 °C, cP	1.51
Explosive limits in air by vol.%	(Lower) 1.36% (Upper) 10.0%
Specific gravity (H <sub>2</sub> O = 1)	
Liquid @ 41/4 °C	1.0576
Solubility in water @ 25 °C, % by weight	8.3
	*Soluble in all proportions above 66 °C

### Handling And Storage

#### Precautions for safe handling

- Avoid contact with incompatible materials.
- Refer to Engineering controls and personal protective equipment.
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been and understood.
- Operators should wear antistatic footwear and clothing.
- Use only static-free tools.

#### Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Check the leakage regularly.
- Avoid direct heating.
- Seal and place if not in use.
- Prevent static electricity and keep away from combustible materials or heat sources.
- Store in a location away from water supply and sewage.
- Do not discharge into the environment
- Do not eat or inhale food when handling.

### Handling And Storage

#### Hazards classification information

- Acute toxicity (oral) : Category3
- Acute toxicity (dermal) : Category3
- Acute Toxicity (Inhalation: dust / mist) : Category3
- Skin corrosion/irritation : Category1B
- Germ cell mutagenicity : Category2
- Specific target organ toxicity(Repeated exposure) : Category2
- NFPA : Health : 4, Flammability : 2, Reactivity : 0 grade (0 ~ 4 level)

#### Human health hazards

- To man
- Toxic if swallowed
  - Toxic in contact with skin
  - Causes severe skin burns and eye damage
  - Toxic if inhaled
  - Suspected of causing genetic defects
  - May cause damage to organs through prolonged or repeated exposure

#### Environmental hazards

- Toxic to fish, aquatic invertebrates and algae
- Harmful to bacteria
- Moderate potential for bioaccumulation