



EHS Fact Sheet

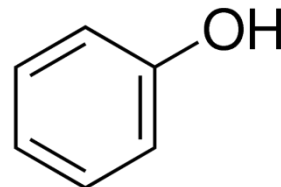
Phenol (carbolic acid, hydroxybenzene, phenyl alcohol)



Phenol (C₅H₅OH) is an aromatic organic compound with a sickeningly sweet and tarry odor. It is available commercially as a viscous liquid or a colorless to pink crystalline solid.

Phenol is an essential precursor to many plastics, pesticides, and pharmaceutical drugs. It is also used quite frequently as an embalming fluid.

When using phenol, the user should be aware of its toxicity and flammability. The vapors are highly toxic and explosive at high concentrations.



Health Effects

Acute Exposure:

Phenol is an irritant and corrosive to the skin, mucous membranes, and upper respiratory tract.

Ingestion of 1 gram of phenol can be fatal. As a vesicant, phenol can cause blindness.

Long Term Exposure:

Exposure to phenol for long periods, or repeatedly, could cause nausea, headache, dizziness, dysphagia, vomiting, shock, convulsions, or death.

Phenol can affect the central nervous system, cardiovascular system, liver, and the kidneys.

Emergency Procedures

Skin contact requires immediate flushing of the contaminated area with soap and water, or the emergency shower for fifteen minutes. In case of eye contact, flush the eyes for fifteen minutes and seek medical attention. If phenol is ingested, *seek immediate medical attention.*

When large amount of phenol vapors have been inhaled, move to fresh air and *seek immediate medical attention.*

Safety Precautions

- Review the Material Safety Data Sheet (MSDS) for phenol before handling the material
- Always use appropriate personal protective equipment and follow safe laboratory practices.
- Neoprene gloves are *recommended*, but a double layer of nitrile can be used for dexterity purposes. However, the user should be aware that phenol can penetrate nitrile in several minutes, so nitrile gloves should be replaced frequently.
- A fume hood should be used if possible, especially when heating, as the vapors are toxic and flammable. Never use appliances (incubators, microwaves, autoclaves, etc.) to heat/melt phenol.
- Always wash hands thoroughly after handling.

Spills and Storage

Spills of undiluted phenol should be considered serious and cleaned immediately. If the material has been heated (or >50 mL) remove ignition sources, ventilate the laboratory, evacuate and call EHS immediately. Small spills can be absorbed using absorbent material and placed in a sealed container that is clearly labeled.

Phenol should be stored away from strong oxidizers and strong bases to prevent violent reactions.