

Ethyl Benzene

Product Stewardship Summary

(CAS number 100-41-4)

Chemical Formula for Ethyl Benzene

C₈H₁₀

What is Ethyl Benzene?

Ethyl Benzene is a colourless liquid made by a catalytic reaction between ethylene and benzene and subsequent distillation.

How is Ethyl Benzene Used?

It is almost exclusively consumed as an intermediate in the manufacture of styrene, the main use of which is in the manufacture of styrene-based polymers. These polymers are in turn used in products such as packaging, kitchen utensils and electronic equipment housing. Ethyl Benzene is also used as a process solvent in industrial settings; its application as a solvent in the professional or consumer sector is not supported.

Health, Safety and Environmental Considerations

Ethyl Benzene has low toxicity following brief/acute exposure by ingestion or inhalation. However, it is harmful by inhalation and breathing of ethyl benzene vapours should be avoided, as inhaling high quantities over prolonged periods can cause drowsiness. Repeated or prolonged inhalation of high concentrations of ethyl benzene has resulted in hearing loss in rats. In a work environment, exposure to high concentrations (or solvent abuse) and interaction with noise may cause hearing loss.

Ethyl Benzene may irritate skin and eyes. Inhalation of vapours may result in respiratory irritation. Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis, which can be fatal. Allergic reactions of skin or respiratory tract have not been observed in the workplace; therefore, no sensitizing potential is expected.

The International Agency for Research on Cancer (IARC) has concluded that there is insufficient evidence to classify ethyl benzene as a carcinogen in humans and limited evidence that it is a carcinogen in animals. Ethyl Benzene is not classified as a carcinogen by regulatory bodies in the US and EU.

Ethyl Benzene is not mutagenic as shown in *in vitro* and *in vivo* tests. Animal studies have not revealed any effects on fertility and no adverse effects on development of offspring were observed.

The threshold limit value for occupational exposure of ethyl benzene is 100 parts per million almost everywhere; this is based on an 8-hour day or 40 hours per week.

Ethyl Benzene is found in the environment in traces due to air emissions from traffic, but it degrades rapidly in the environment and does not significantly bio-accumulate. It can be acutely toxic in the aquatic environment with potential for some long-term effects. If ethyl benzene reaches soil, it has the potential to be mobile and may contaminate ground water sources.

Ethyl Benzene is a highly flammable liquid. It floats on water. Ethyl Benzene vapours are heavier than air and may travel across the ground and reach remote ignition sources causing a flashback fire danger.

Storing and Transporting Ethyl Benzene

The product must be stored in well-ventilated areas away from direct sunlight, ignition sources and other sources of heat. The storage temperature should be ambient. Ethyl Benzene is moved primarily within a manufacturing site by pipeline. It is not generally transported, other than by ship to styrene production facilities.

Risk Characterization Summary

Risks associated with exposure to this product have been evaluated for the following “chain-of-commerce” activities: manufacture, storage, product transfer, transportation, and customers /markets. Due to health, safety and environmental considerations, it is only manufactured, stored and transported to customers in closed systems. Likewise, customers are limited to those who only use the product in closed systems as an intermediate for the manufacture of other chemicals. Proper equipment design and handling procedures maintain low risk from exposure to the product where the product is used as a chemical intermediate.

This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the chemical’s applicable [Safety Data Sheet](#), which should be consulted before use of the chemical. This product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.



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