

Ethyl benzene Product Stewardship Summary

CAS number

100-41-4

Chemical formula

C₈H₁₀

What is Ethyl benzene?

Ethyl benzene is a colourless liquid made by a chemical reaction between ethylene and benzene.

How is Ethyl benzene used?

It is used almost exclusively in the manufacture of styrene, the main use of which is in the manufacture of polystyrene, which in turn is used in products such as packaging, kitchen utensils and electronic equipment housing. It can be used as a solvent, but it is estimated that this and other non-styrene uses account for less than 1% of total Ethyl benzene production.

Health, Safety and Environmental considerations

Ethyl benzene has low toxicity following brief/acute exposure by ingestion or inhalation. However, breathing of Ethyl benzene vapours should be avoided as inhaling high quantities over prolonged periods can cause drowsiness. EU regulations classify Ethyl benzene as 'harmful' by inhalation. If swallowed, vomiting should not be induced as it might enter and damage the lungs.

Ethyl benzene can irritate skin and eyes slightly, but the effect is so minimal that it does not need labelling according to EU regulations. It has not been observed to cause allergic reactions.

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 other regulatory bodies in the US and EU. In Canada, however, the regulatory system requires a cancer classification due to the IARC position.

The occupational exposure level for Ethyl benzene is 100 parts per million TWA and 125 parts per million STEL almost everywhere. The product degrades rapidly in the environment and does not significantly bio-

accumulate. Ethyl benzene is expected to be harmful to aquatic organisms. The main reason for traces of Ethyl benzene in the air is pollution from traffic.

Ethyl benzene is highly flammable and floats on water.

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 Material 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.