

SAFETY DATA SHEET



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ETHYLBENZENE

SDS No. M0094

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ethyl Benzene

Synonyms: Ethylbenzol, Phenylethane

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION



Classification:

Flammable Liquids: GHS Category 2

Acute Toxicity, Inhalation: GHS Category 4

Carcinogenicity: GHS Category 2

Acute Aquatic Toxicity: GHS Category 2

Chronic Aquatic Toxicity: GHS Category 2

Label Elements

Signal Word: DANGER!

Hazard Statements:

H225 – Highly flammable liquid and vapor.

H304 – Maybe fatal if swallowed and enters airways.

H332 – Harmful if inhaled.

H351 – Suspected of causing cancer.

H373 – May cause damage to organs through prolonged or repeated exposure.

H411 – Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P243 – Take precautionary measures against static discharge.

P271 – Use only outdoors or in a well-ventilated area.

P273 – Avoid release to the environment.

P280 – Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Clear focus. Consistent results. Complete confidence.

P304+P340+P312 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

P403+P235 – Store in a well-ventilated place. Keep cool.

P501 – Dispose of contents/ container to an approved waste disposal plant.

Emergency Overview

Hazardous if swallowed or inhaled. Causes irritation to eyes and skin. May cause central nervous system effects. May cause cancer. Highly flammable liquid and vapor. Static electrical hazard. Target Organs: Central nervous system.

HMIS Rating:

Health – 1* Flammability – 3 Physical Hazard – 0 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Ethyl Benzene	100-41-4	>99%	Yes

4. FIRST-AID MEASURES

Inhalation: If inhaled, remove to fresh air. If breathing is labored or with coughing, give 100% supplemental oxygen. If not breathing, begin artificial respiration. Get medical aid.

Ingestion: Aspiration hazard. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Highly flammable liquid and vapor (GHS Category 2)

Auto-ignition Temperature: 432° C (809° F)

Flash Point: 15° C (59° F)

Flammable Limits: Lower Limit – 1 vol %, Upper Limit – 6.7 vol %

Products of Combustion: Will decompose into highly toxic and irritating gases (carbon monoxide, carbon dioxide) under fire conditions.

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Material floats on water and travel to a source of ignition. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Specific Explosion Hazards: Vapors may form an explosive mixture with air.

Fire Fighting Media: Water streams may be ineffective. Use water spray, alcohol foam, carbon dioxide, or dry chemical.

National Fire Protective Association: Health - 2, Flammability - 3, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Provide ventilation to the affected area and remove all ignition sources. Avoid run-off into storm sewers and ditches that lead to waterways. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Use only non-sparking tools and equipment. A vapor suppressing foam may be used. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away from all sources of ignition and oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or appropriate eye protection. Use appropriate protective gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits:

ACGIH – 400 ppm TWA;

NIOSH – 100 ppm TWA; 435 mg/m³ TWA; 600 ppm IDLH

OSHA Final PELs – 100 ppm TWA; 435 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: Sweetish gasoline-like odor

Molecular Formula: C₆H₅C₂H₅

Molecular Weight: 106.17

Auto-ignition Temperature: 432° C (809° F)

Flash Point: 15° C (59° F)

Flammable Limits: Lower Limit – 0.8 vol %, Upper Limit – 7.0 vol %

pH: Not available.

Boiling Point: 136° C @ 760 mm Hg

Freezing/Melting Point: -94° C

Decomposition Temperature: Not available

Specific Gravity: 0.867 g/cm³ @ 20° C

Vapor Density (Air=1): 3.66

Vapor Pressure: 0.9 kPa @ 20° C.

Evaporation Rate (Butyl acetate = 1): Not available

Viscosity: Not available

Solubility: Very slightly soluble

Conductivity: Nonconductive; Conductivity = 30 pS/m; Dielectric Constant = 2.3; Relaxation Time Constant = 0.68 seconds

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, excess heat, exposure to light.

Incompatibility with Various Substances: Oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: Harmful if inhaled. May cause respiratory tract irritation. Inhalation of high concentrations may cause headache, nausea, weakness, dizziness, and drowsiness.

INGESTION HAZARD: Harmful if swallowed. Aspiration hazard. May cause irritation of the digestive tract with abdominal pain, nausea, and vomiting.

SKIN CONTACT HAZARD: Causes skin irritation. May be absorbed through the skin.

EYE CONTACT HAZARD: Causes eye irritation. May cause severe irritation and conjunctivitis.

Chronic Exposure Hazards: Prolonged or repeated exposure may cause dryness and cracking of skin. Chronic inhalation may cause effects similar to those of acute inhalation. Possible human carcinogen. May cause mutagenic effects. May cause adverse reproductive effects.

Animal Toxicity:

Skin, rabbit: LC50 = 15,422 mg/kg;

Carcinogenicity: IARC Classification 2B (possible human carcinogen)

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available

Neurotoxicity: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Rainbow trout; LC50 = 4.3 mg/L: 96H static;

Fish: Blue Gill/Sunfish; LC50 = 80 mg/L: 96H static;

Fish: Sheepshead minnow; LC50 = 88 mg/L: 96H; NOEC = 88 mg/L: 96H

Aquatic invertebrates: Water flea; EC50, 2.9 mg/L: 48H

Environmental Fate: Short term biodegradation products are not likely to be hazardous. Products of degradation are less hazardous than the product

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

US DOT

Proper Shipping Name: Ethylbenzene

Hazard Class: 3

UN Number: UN1175

Packing Group: II

IMDG

Proper Shipping Name: Ethylbenzene

Hazard Class: 3

UN Number: UN1175

Packing Group: II

IATA

Proper Shipping Name: Ethylbenzene

Hazard Class: 3

UN Number: UN1175

Packing Group: II

15. REGULATORY INFORMATION

US Federal Regulations:

CERCLA Hazardous Substances: CAS# 100-41-4 – 1000 lb final RQ; 454 kg final RQ

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 100-41-4 –fire

Section 313: Ethylbenzene (CAS# 100-41-4) is subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.

Clean Air Act: CAS# 100-41-4 is listed as a hazardous air pollutant (HAP).

Clean Water Act: CAS# 100-41-4 is listed as a Hazardous Substance.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 100-41-4 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts

California Prop 65: WARNING! This product contains a chemical known to the State of California to cause cancer.

16. OTHER INFORMATION

Originally Prepared: 10/24/2006

Last Revised: 07/06/2018 – Updated pictograms, hazard categories, and hazard statements in Section 2.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

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