

Chemical Safety Data Sheet MSDS / SDS

2-phenylpropene SDS

Revision Date:2024-04-25 Revision Number:1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: 2-phenylpropene

CAS: 98-83-9

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification**Classification of the substance or mixture**

Flammable liquids, Category 3

Eye irritation, Category 2

Specific target organ toxicity - single exposure, Category 3
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P319 Get medical help if you feel unwell.
P391 Collect spillage.

Storage

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: 2-phenylpropene

Common names and synonyms: 2-phenylpropene

CAS number: 98-83-9

EC number: 202-705-0

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth.

Most important symptoms/effects, acute and delayed

Inhalation causes irritation of respiratory tract, headache, dizziness, light-headedness, and breathlessness. Ingestion causes irritation of mouth and stomach. Contact with liquid irritates eyes. Prolonged skin contact can cause severe rashes, swelling, and blistering. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Aromatic hydrocarbons and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible)]: CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient. CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective. SMALL FIRE: Dry chemical, CO₂, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam. Do not use straight streams. Move containers from fire area if you can do it without risk. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2016)

Specific hazards arising from the chemical

Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or

involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. Substance may be transported hot. For hybrid vehicles, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. If molten aluminum is involved, refer to ERG Guide 169. (ERG, 2016)

Special protective actions for fire-fighters

Use water spray, foam, powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

For spills & leakage absorb on paper. Evaporate on a glass or iron dish in hood. Burn the paper.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 54°C use a closed system, ventilation and explosion-proof electrical equipment. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Store only if stabilized. Store in an area without drain or sewer access. Fireproof. Well closed. Separated from strong oxidants. DURING STORAGE IT IS FREQUENTLY STABILIZED WITH TERT-BUTYL CATECHOL AS INHIBITOR.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 10 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans).MAK: 250 mg/m³, 50 ppm; peak limitation category: I(2); pregnancy risk group: D.EU-OEL: 246 mg/m³, 50 ppm as TWA; 492 mg/m³, 100 ppm as STEL

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid.
Colour:	Colourless.
Odour:	... Characteristic odor.

Melting point/freezing point:	-23.2 °C. Atm. press.:Ca. 1 013 hPa.
Boiling point or initial boiling point and boiling range:	165.4 °C. Atm. press.:1 013 hPa.
Flammability:	Class II Combustible Liquid: Fl.P. at or above 100°F and below 140°F.
Lower and upper explosion limit/flammability limit:	1.9% (lower flammable limit) ; 6.1% (upper flammable limit)
Flash point:	54 °C. Atm. press.:Ca. 1 013 hPa.
Auto-ignition temperature:	574 °C. Atm. press.:1 013 hPa.
Decomposition temperature:	no data available
pH:	5 - 6.
Kinematic viscosity:	dynamic viscosity (in mPa s) = 0.94. Temperature:20°C.
Solubility:	less than 1 mg/mL at 72° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 3.48. Temperature:25 °C.
Vapour pressure:	2.53 hPa. Temperature:20 °C.;24 hPa. Temperature:60 °C.;130.66 hPa. Temperature:100 °C.
Density and/or relative density:	0.91 g/cm ³ . Temperature:20 °C.
Relative vapour density:	4.1 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance may polymerize. Decomposes on burning. This produces toxic fumes. Reacts with strong oxidants. Attacks aluminium and copper.

Chemical stability

no data available

Possibility of hazardous reactions

Moderate fire risk. ISOPROPENYLBENZENE is easily peroxidizable; the peroxide may initiate exothermic polymerization of the bulk material. Reacts violently with strong oxidizing agents [Handling Chemicals Safely, 1980 p. 866; Bretherick, 1979 p. 160].

Conditions to avoid

no data available

Incompatible materials

Oxidizers, peroxides, halogens, catalysts for vinyl or ionic polymers; aluminum, iron chloride, copper [Note: Usually contains an inhibitor such as tert-butyl catechol].

Hazardous decomposition products

When heated to decomposition, it emits acrid smoke & fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 4900 mg/kg

Inhalation: LC50 - rat (male) - ca. 22.85 mg/L air.

Dermal: LD50 - rabbit (male) - ca. 14 560 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

TLV-A3

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. Lachrymation.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis.

Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Danio rerio (previous name: Brachydanio rerio) - 2.97 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 1.645 mg/L - 48 h.

Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - 11.44 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 2 000 mg/L - 3 h. Remarks: Respiration rate.

Persistence and degradability

AEROBIC: alpha-Methylstyrene, present at 100 mg/l, reached 0% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(6). Therefore this compound is not expected to biodegrade(SRC). However, several microorganisms are able to grow using alpha-methylstyrene as a carbon source(2).

Bioaccumulative potential

A BCF of 30 in goldfish was measured for alpha-methylstyrene(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of alpha-methylstyrene is estimated as 1,900(SRC), using a log Kow of 3.48(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that alpha-methylstyrene is expected to have low mobility in soil(SRC).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas

scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2303 (For reference only, please check.)

IMDG: UN2303 (For reference only, please check.)

IATA: UN2303 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ISOPROPENYLBENZENE (For reference only, please check.)

IMDG: ISOPROPENYLBENZENE (For reference only, please check.)

IATA: ISOPROPENYLBENZENE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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