

Safety data for dioctyl phthalate

[Glossary](#) of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: bis(2-ethylhexyl)phthalate, phthalic acid bis(2-ethylhexyl) ester, 1,2-benzenecarboxylic acid dioctyl ester, DEHP, phthalic acid dioctyl ester, diethylhexyl phthalate, eviplast 80, eviplast 81, felximel, flexol DOP, good-rite GP 264, hatcol DOP, hercoflex 260, jayflex DOP, kodaflex DOP, mollan O, nuoplaz DOP, octoil, palatinol AH, reomol D 79P, sicol 150, staflex DOP, further trade names

Use: plasticizer for PVC and other resins. Dielectric fluid.

Permitted component in food packaging material

Molecular formula: $C_{24}H_{38}O_4$

Structural formula: $C_6H_4(COOCH_2CH(C_2H_5)C_4H_9)_2$

CAS No: 117-81-7

EC No: 204-211-0

Annex I Index No: 607-317-00-9

Physical data

Appearance: colourless liquid

Melting point: -52 C

Boiling point: 384 C

Vapour density:

Vapour pressure:

Specific gravity: 0.9861

Flash point: 215 C (closed cup)

Explosion limits: 0.3% (lower)

Autoignition temperature: 390 C

Viscosity 0.4 poise
Refractive index 1.4848

Stability

Stable. Incompatible with strong oxidizing agents. Combustible.

Toxicology

May be harmful by inhalation, ingestion or skin absorption. Laboratory evidence suggests that high doses during pregnancy may reduce birth weight of lab animals. May have toxic effects on embryo or fetus. Possible carcinogen. Skin, eye and respiratory irritant. Typical occupational TLV 3mg/m³. Added to the ECHA Candidate List of Substances of Very High Concern for authorisation (toxic to reproduction) 28.10.08.

Toxicity data

(The meaning of any abbreviations which appear in this section is given [here.](#))

RAT-ORL LD50 31000 mg kg⁻¹

IPR-RAT LD50 30700 mg kg⁻¹

Risk phrases

(The meaning of any risk phrases which appear in this section is given [here.](#))

R36 R37 R38 R60 R61.

Environmental information

Biodegrades in water with a half life of 2-3 weeks.

Personal protection

Safety glasses, gloves. Adequate ventilation. Take particular care if pregnancy is suspected or anticipated.

Safety phrases

(The meaning of any safety phrases which appear in this section is given [here.](#))

S45 S53.

[Return to [Physical & Theoretical Chemistry Lab. Safety home page.](#)]

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Specifications for Dioctyl Phthalate (DOP)

Molecular Formula $C_{24}H_{38}O_4$

Mol Wt 390.57

CAS # [117-81-7]

Description Clear colourless liquid

Assay (%) 99.5 min

Boiling range in deg cel 350

Uses

Polymer In manufactures of PVA, rubber, cellulose plastic and polyurethanes

Printing Ink As plasticizer

Masterbatch as waxing agent