SAFETY DATA SHEET

Creation Date 24-Nov-2010 **Revision Date** 27-Dec-2025 **Revision Number** 5

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name **Bis(2-ethylhexyl) phthalate**

Cat No. : **A10415**

CAS No 117-81-7
Synonyms Bis(2-ethylhexyl) phthalate; DOP; Di-2-ethylhexyl phthalate

Recommended Use Laboratory chemicals.
Uses advised against .

Details of the supplier of the safety data sheet

Company
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1B

Label Elements

Signal Word
Danger

Hazard Statements
May cause cancer
May damage fertility. May damage the unborn child



Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Response
IF exposed or concerned: Get medical attention/advice
Storage
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)

Hazards classified under paragraph (d)(1)(ii) of 1910.1200
No information available
Other hazards
Contains a known or suspected endocrine disruptor.
WARNING. Cancer and Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/information on Ingredients

Component	CAS No	Weight %
Di(2-ethylhexyl)phthalate	117-81-7	>95

4. First-aid measures

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion Call a physician immediately. Clean mouth with water.

Most important symptoms and effects No information available.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. Water mist may be used to cool closed containers. Chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point 195 °C / 383 °F

Method - No information available

Autoignition Temperature 390 °C / 734 °F

Explosion Limits
Upper 0.18%
Lower 0.1%
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Vapors may form explosive mixtures with air.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO_2).
Protective Equipment and Precautions for Firefighters
Vapors are heavier than air and may spread along floors. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	0	0	N/A

6. Accidental release measures

Personal Precautions Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Use personal protective equipment as required. Ensure adequate ventilation. Do not touch damaged packages or spilled material.

Environmental Precautions See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up Wear self-contained breathing apparatus and protective suit. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Do not let this chemical enter the environment.

7. Handling and Storage

Handling Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation.

Storage. Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Strong oxidizing agents.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Di(2-ethylhexyl)phthalate	TWA: 0.1 mg/m³ Skin	(Vacated) TWA: 5 mg/m³ (Vacated) STEL: 10 mg/m³ TWA: 5 mg/m³	IDLH: 5000 mg/m³ REL = 5 mg/m³ (TWA) STEL: 10 mg/m³	TWA: 5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Organic gases and vapours filter. Type A. Brown. conforming to EN14387.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Physical State	Liquid		
Color	Light yellow		
Odor	Odorless		
Odor Threshold	No information available		
Property	**Values**	**Remarks**	**• Method**
Melting Point/Range	-50 °C / -58 °F		
Softening Point	No data available		
Boiling Point/Range	384 °C / 723.2 °F	@ 760 mmHg	
Flash Point	195 °C / 383 °F	**Method -** No information available	
Flammability (liquid)	No data available		
Flammability (solid,gas)	Not applicable	Liquid	
Explosion Limits	**Lower** 0.1		
Autoignition Temperature	390 °C / 734 °F		
Decomposition Temperature	No data available		
pH	No information available		
Viscosity	80 mPa.s at 20 °C		
Water Solubility	Virtually insoluble		
Solubility in other solvents	No information available		
Partition Coefficient (n-octanol/water)			
Component	**log Pow**		
Di(2-ethylhexyl)phthalate	5.03		
Vapor Pressure	1.8 mbar @ 200 °C		
Density / Specific Gravity	0.981		
Bulk Density	Not applicable	Liquid	
Vapor Density	13.46 (Air = 1.0)	(Air = 1.0)	
Particle characteristics	Not applicable (liquid)		

Other Information

Molecular Formula	C24 H38 O4
Molecular Weight	390.55

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation Not an expected route of exposure.
Ingestion May be harmful if swallowed.
Eyes Avoid contact with eyes.
Skin Avoid contact with skin.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Di(2-ethylhexyl)phthalate	LD50 = 30 g/kg (Rat)	LD50 = 25 g/kg (Rabbit)	LC50 > 10620 mg/m³ (Rat) 4 h

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity;

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Di(2-ethylhexyl)phthalate	117-81-7	Group 2B	Reasonably Anticipated	A3	X	A3

(g) reproductive toxicity; Category 1B

Reproductive Effects Product is or contains a chemical which is a known or suspected reproductive hazard.
Teratogenicity Teratogenic effects have occurred in experimental animals.

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Other Adverse Effects See actual entry in RTECS for complete information

Symptoms / effects,both acute and delayed No information available.

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disrupting Properties .

Assess endocrine disrupting properties for human health Substance identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 Contains a substance on the National Authorities Endocrine Disruptor Lists

Component	EU National Authorities Endocrine Disruptor Lists - Health
Di(2-ethylhexyl)phthalate 117-81-7 (>95)	List I

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Di(2-ethylhexyl)phthalate	Group I Chemical	High Exposure Concern	Not applicable

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Di(2-ethylhexyl)phthalate	EC50: > 0.1 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: > 0.1 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: > 130 mg/L, 72h (Desmodesmus subspicatus)	LC50: > 0.32 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: > 0.32 mg/L, 96h semi-static (Oryzias latipes) LC50: > 0.32 mg/L, 96h semi-static (Brachydanio rerio) LC50: > 0.32 mg/L, 96h semi-static (Poecilia reticulata) LC50: > 0.67 mg/L, 96h flow-through (Oryzias latipes) LC50: > 100 mg/L, 96h static (Oncorhynchus mykiss) LC50: 0.27 - 0.67 mg/L, 96h flow-through (Pimephales promelas) LC50: > 0.16 mg/L, 96h static (Pimephales promelas) LC50: > 0.200 mg/L, 96h static (Lepomis macrochirus) LC50: > 0.200 mg/L, 96h flow-through (Lepomis macrochirus)	EC50 = 800 mg/L 15 min EC50 = 800 mg/L 30 min EC50 = 800 mg/L 5 min	LC50: = 9.4 mg/L, 48h (Daphnia magna) EC50: > 0.16 mg/L, 48h (Daphnia magna)

Persistence and Degradability May persist

Bioaccumulation/ Accumulation No information available.

Mobility .

Component	log Pow
Di(2-ethylhexyl)phthalate	5.03

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Di(2-ethylhexyl)phthalate - 117-81-7	U028	-

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory Information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Di(2-ethylhexyl)phthalate	117-81-7	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Di(2-ethylhexyl)phthalate	117-81-7	X	-	204-211-0	X	X	X	X	X	KE-02196

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Di(2-ethylhexyl)phthalate	117-81-7	>95	0.1 %	-

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Di(2-ethylhexyl)phthalate	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Di(2-ethylhexyl)phthalate	X		-

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Di(2-ethylhexyl)phthalate	100 lb	-	100 lb 45.4 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Di(2-ethylhexyl)phthalate	117-81-7	Carcinogen Developmental Male Reproductive	310 µg/day	Developmental Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Di(2-ethylhexyl)phthalate	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Di(2-ethylhexyl)phthalate	117-81-7	Toxic for reproduction Category 1B Article 57 Application date: August 21, 2013 Sunset date: February 21,	Use restricted. See entry 30. (see link for restriction details) Use restricted. See entry	SVHC Candidate list - 204-211-0 - Toxic for reproduction, Article 57c;Endocrine disrupting properties, Article 57f -

		2015 Exemption - Uses in the immediate packaging of medicinal products covered under Regulation (EC) No 726/2004 Directive 2001/82/EC and/or Directive 2011/83/EC	51[a]. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	environment;Endocrine disrupting properties, Article 57f - human health

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links
https://echa.europa.eu/authorisation-list
https://echa.europa.eu/substances-restricted-under-reach
https://echa.europa.eu/candidate-list-table

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Di(2-ethylhexyl)phthalate	117-81-7	Listed	Not applicable	Not applicable	0.1% (Max. Conc.)

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Di(2-ethylhexyl)phthalate	117-81-7	Not applicable	Not applicable	Not applicable	Not applicable

16. Other Information

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS