

MATERIAL SAFETY DATA SHEET

Dibutyl Phthalate



Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name:	Dibutyl Phthalate
CAS Number:	84-74-2
EC Number:	201-557-4
Index Number:	607-318-00-4

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

Product use:	Laboratory chemicals, Synthesis of substances
--------------	---

1.3 Details of the supplier of the safety data sheet

Company name:	East Harbour Group Ltd Miranda House, The Quay Harwich, Essex, CO12 3HH United Kingdom
---------------	---

Telephone:	+44 (0) 333 242 0100
Email:	info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone:	0800 246 1274
----------------------	---------------

Section 2: Hazardous identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Reproductive toxicity (Category 1B), H360
Acute aquatic toxicity (Category 1), H400

Information concerning particular hazards for human and environmental: Not applicable
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Pictogram



Signal word

Danger

Hazard statement(s)

H360Df
H400

May damage fertility or the unborn child.
Very toxic to aquatic life.



Dibutyl Phthalate

Precautionary statement(s)

P201	Obtain special instructions before use.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.2 Other hazards

Criteria for PBT, vPvB: substance does not meet the criteria for PBT, vPvB.

Other hazard which does not result from classification: CLP classification of water environment except harmonized classification: Aquatic Chronic 2; H411 (Toxic to aquatic life with long lasting effects.)

Section 3: Composition/information on ingredients

3.1. Substances

Chemical substance: Dibutyl phthalate
Composition from other dangerous substances content viewpoint:

Chemical name	CAS No.	EC No.	Content at %	Classification
Dibutyl phthalate	84-74-2	201-557-4	min. 98	See point 2.1

Section 4: First aid measures

4.1 Description of first aid measures

General instructions:

If health problems occur or if you suspect that your health may have been affected, contact your physician, and give the information stated on this safety data sheet. If the affected person has lost consciousness or if you believe that he/she may lose consciousness, transport the person to a healthcare provider in a stabilised position, lying on his/her side.

Inhalation:

Move the victim to fresh air.

Contact with skin:

Wash the affected area thoroughly with water and soap for 10-15 minutes.

In case of contact with eyes:

Wash the eye with a plenty of water or physiological solution for 10-15 minutes from inner to outer eye corner. If the afflicted person is wearing contact lenses, they must be removed immediately. Call for a professional medical help promptly.

Ingestion:

Have the victim drink approx. 2 dl of water, dose charcoal (approx. 20 tabs crushed in water). Call for a professional medical help.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: headache, drowsiness, dizziness, convulsions, respiratory tract irritation (at strong exposition by aerosol and vapours).

Contact with skin: sporadically irritation (at strong longer exposition).

Contact with eyes: irritation, redness, eye-burn, lacrimation

Ingestion: irritation, nausea, stomach pain, dizziness, headache

Dibutyl Phthalate



4.3 Indication of any immediate medical attention and special treatment needed

See above

Section 5: Fire-fighting measures

5.1 Fire Fighting Media and Instructions:

Suitable extinguishing media: Powder or snow fire-extinguisher. In the case of a large-scale fire, use heavy foam with a polar foam maker, or a split water stream. Circumjacent containers should be cooled with a screen of water.

Unsuitable extinguishing media: Direct water stream

5.2 Special hazards arising from the substance or mixture

While the substance burns, it produces toxic products. Vapours of this product makes explosive mixtures with the air.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary

Flammability class: IV (ČSN 65 0201) **Temperature class:** T2 (ČSN 33 0371) **Explosive group:** IIA (ČSN 33 0371)

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Close the place of the accident, use the personal emergency equipment described in Section 8. Remove or switch off all sources of ignition. Ensure supply of fresh air in enclosed room. Measure a concentration of substance vapours in the air continuously (see point 5.2.).

6.2 Environmental precautions

Prevent the substance from leaking into the sewerage system, ground, and surface water or into the soil. If the capacity of the leakage source is large, raise emergency alarm.

6.3 Methods and material for containment and cleaning up

The leaked liquid should be enclosed and pumped into a container suitable for further processing or disposal. The remnants should be absorbed into a suitable porous material (sand, vapex, infusorial earth). Disposal of the substance is governed by the valid waste handling legislation, see also Section 13.

6.4 Reference to other sections:

See sections 8,13

Section 7: Handling and storage

7.1 Precautions for safe handling

Keep regional regulation for flammable liquid handling; provide good vapour ventilation and, for the work place, exhaust, prevent the escape of substance vapours into the atmosphere, use working protective means in compliance with Point No. 8, handle in a manner as to prevent spillage or escape, prevent contact of the substance with open flame, sparks, or hot surfaces.



Dibutyl Phthalate

7.2 Conditions for safe storage, including any incompatibilities

Keep regional regulation for flammable liquid storing; keep ventilating the storage room efficiently, use protective means in compliance with Point No. 8, store in closed packaging or tanks only, do not store together with strong oxidising agents, keep reservoirs, tanks and receptacles dry and tightly closed, temperature and pressure normal without strong violent changes, do not exposure to sunshine.

7.3 Specific end use(s)

Not determined.

For eventual other specific information to identified use see ES in Annex of the SDS.

Section 8: Exposure controls/personal protection

8.1 Control parameters

In compliance with Point No. 7. Legislation requirements:

Czech Republic (Government Decree No. 361/2007 Coll.):

Name	PEL [mg.m ⁻³]	HPC-P [mg.m ⁻³]
Dibutyl Phthalate (CAS 84-74-2)	5	10

PEL Permissible exposure limit of a chemical substance in the air

HPC-P The highest permissible concentration limit of a chemical substance in the air

European Union (Directive 2006/15/EC):

Name	TWA (8-hour limit)		STEL (Short-term limit)	
	[mg.m ⁻³]	[ppm]	[mg.m ⁻³]	[ppm]
Dibutyl Phthalate(CAS 84-74-2)	-	-	-	-

TWA: Measured or calculated in relation to the reference period of eight hours as a time weighted average.

STEL: The limit value that should not be exceeded and that is equal to the period of 15 minutes.

The recommended method of measuring the concentration in the air at the workplace: Spectrophotometer, detection tube.

National exposure limit values: For national exposure limit values see e.g.: <http://limitvalue.ifa.dguv.de/> (see full text in section 16). Compliance with applicable national laws is the responsibility of the user.

Exposure pattern	Route	DNELs for workers	DNEL for general population
Acute - systemic effects	Inhalation	2.84 mg/m ³	-
Long-term – systemic effects	Dermal	0.19 mg/kg bw/day	0.07 mg/kg bw/day
Long-term – systemic effects	Inhalation	0.13 mg/m ³	0.02 mg/m ³
Long-term – systemic effects	Oral	-	0.007 mg/kg bw/day

PNEC

PNEC aqua (freshwater): 10 µg/L

PNEC aqua (marine water): 1 µg/L

PNEC aqua (intermittent releases): 4.8 µg/L

PNEC STP: 0.22 mg/L

PNEC sediment (freshwater): 1.19 mg/kg sediment dw

PNEC sediment (marine water): 0.119 mg/kg sediment dw

PNEC soil: 0.05 mg/kg soil dw

PNEC oral (predator): 1.33 mg/kg food

See Explanatory note in article 16 of the SDS

8.2 Exposure controls /

Appropriate engineering controls

Collective protection measures

Plant-wide and local ventilation, effective exhaust system, automation, hermetic sealing.



Dibutyl Phthalate

Individual protection measures

The staff must wear personal protection equipment (PPE) to protect their eyes, hands, and skin. This equipment must be suitable for the nature of the activities they do. Wherever the technical means do not enable obeying the exposure limits determined for the working environment or ensuring that inhaling the substance does not affect a persons' health, the staff must use also suitable protection of the respiratory system. If the staff are to use this equipment permanently while working, it is necessary to include safety breaks, if required by the nature of the PPE. All the PPE must be kept in good condition. Any polluted or damaged equipment must be replaced immediately.

8.3 Personal protective equipment

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hand protection: Protective gloves

Glove Material	Penetration time
Nitrile-rubber	According to producers
Butyl-rubber	recommendation

Skin protection: protective suit and footwear, unprotected skin must be treated with a protective cream before work.

Respiratory protection: In case of short-time exposure or low concentration use the respirator with filter protecting from organic vapours, in case of high concentrations and long-term exposure use self-contained breathing apparatus

General safety and hygienic measures: Follow the rules of personal hygiene. Do not eat, drink, or smoke while working! Wash your hands as well as any uncovered parts of your body well with water and soap or treat them with suitable reparation lotion after finishing work or before eating or drinking.

Environmental exposure controls

Follow the valid legal regulations governing the protection of the air and water.

For more details, please read relevant Exposure Scenario in Annex.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20°C and 1013 hPa

Colour

Odour

Odour Threshold

pH

Melting/Freezing Point

Initial Boiling Point and Boiling Range

Flash Point

Evaporation Rate

Upper/Lower Flammability or Explosive Limits

Flammability

Vapor Pressure

Vapor Density

Relative Density

Water Solubility

Liquid

Colourless or yellowish

Organic odour

Not determined

Not determined

<-20°C

340 °C at 1013 hPa

186.5 °C at 1013 hPa

Not determined

Not determined

Non-flammable (according to CLP classification)

0.016 Pa at 20 °C

Not determined

1.049 at 20°C

11.4 mg/L at 25 °C

Dibutyl Phthalate



Partition Coefficient n-octanol/water (log value)
Auto-ignition temperature
Decomposition temperature
Viscosity
Explosive properties
Oxidizing properties

Log Kow (Pow): 4.46 at 30 °C
 390 °C at 1013 hPa
 Not determined
 18.8 mm²/s (static) at 20°C
 Non-explosive
 No

9.2 Other Information

Property

Solubility (at 20 °C) in other solvents

Value

Readily solved: benzene, polar organic solvent, e.g. alcohol, ether, acetone

Section 10: Stability and Reactivity

10.1 Reactivity

Concentrated strong acids and bases, strong oxidising agents

10.2 Chemical Stability

The product is stable at conventional physical - chemical conditions and ambient temperature

10.3 Possibility of hazardous reactions

Strong oxidising agents

10.4 Conditions to avoid

Contact with exposed flame, hot surfaces, and sparks, formation of explosive mixtures of the substance vapours with air.

10.5 Incompatible materials

Concentrated strong acids and bases, strong oxidising agents

10.6 Hazardous decomposition products

Toxic fumes generation in case of a fire

Section 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity - Substance is low toxic if swallowed, low to moderate toxic by inhalation, tow toxic in contact with skin. LD50 (oral, rat): 6279 mg/kg bw; LC50 (inhalation, rat): 15.68 mg/m³

Sub chronic - chronic toxicity:

No. NOAEL: 152 mg/kg bw/day (sub chronic; rat); NOAEC: 509 mg/m³ (sub chronic; rat)

Sensitisation: not sensitising.

Skin corrosion/Irritation: not irritating

Eye irritation: not irritating

Respiratory irritation: not irritating

Germ cell mutagenicity: negative. Based on the data available non-genotoxic substance. The substance is not a mutagen

Carcinogenic: The substance is not a carcinogen.

Reproductive toxicity and developmental toxicity: Repr. 1B. May damage the unborn child. Suspected of damaging fertility.

STOT-single exposure: Does not meet criteria for classification. Not classified.

STOT-repeated exposure: Does not meet criteria for classification. Not classified.

Aspiration hazard: No

Dibutyl Phthalate



Section 12: Ecological Information

12.1 Toxicity

Ecotoxicity effects

LC50 for freshwater fish: 0.48 mg/L
 NOEC for freshwater fish: 100 µg/L;
 EC50/LC50 for freshwater invertebrates: 2.99 mg/L
 NOEC for freshwater invertebrates: 100 µg/L
 EC50/LC50 for marine water invertebrates: 0.5 mg/L
 EC50/LC50 for freshwater algae 0.75 mg/L
 NOEC for freshwater algae: 0.39 mg/L

12.2. Persistence and degradability

Readily biodegradable in environmental media (water, sediments, soil)

12.3. Bioaccumulative potential

BCF <200; (BCF: 1.8L/kg ww) low to moderate potential for bioconcentration in aquatic organisms. Substance does not meet the international regulatory criteria for bioaccumulation.

12.4. Mobility

Mobility low (moderate sorption to soil/sediment and slow migration to ground water).

12.5 Results of PBT and vPvB assessment

Substance is not PBT, vPvB according to information above.

12.6 Other adverse effects

Possible impacts on waste water treatment plants: The concentrations of this substance in waste water to be treated must comply in the controlled mode with the sewerage regulations. Under the Water Act, Act No. 254/2001 Coll., the product is considered a hazardous substance and a dangerous substance according to Annex 1 of the Water Act. Prevent the substance from leaking into ground water, soil and sewerage systems.

Section 13: Disposal considerations

13.1 Waste treatment methods

The substance must be handled in compliance with the valid legal regulations governing the disposal of waste as well as with other environmental regulations. Leaked product must be handled in the manner described in Section 6.3 and then handed over to a person authorised to handle hazardous waste. It is recommended to dispose of this substance by making it a material that can be further used for energy generation purposes. Contact the producer for any additional information. Recommended classification of the waste under Decree No. 93/2016 Coll.: 070199*, 070199*, 160508*

Methods of contaminated packaging disposal Proceed in the same manner as when disposing of the product under Section 6. Transport tanks use only after cleaning them in authorised cleaning station. Recommended classification of the packaging waste under Decree No. 93/2016 Coll.: 15 01 10*

Measures to limit exposure while handling waste See relevant Exposure Scenario in Annex I for more details.

Legal regulations governing the disposal and handling of waste The Czech Republic Act No. 185/2001 Coll. on waste modifying certain other acts, in the valid wording including delegated legislative (e.g., Decree No. 93/2016 Coll. determining the Catalogue of Waste) The European Union Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives, in the valid wording.

Dibutyl Phthalate

Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste, in the valid wording.

For eventual other specific information to identified use see ES in the Annex.

Section 14: Transport Information

	Land transport ADR/RID	Marine transport IMDG	Air transport ICAO/IATA	River transport ADN
14.1 UN Number	3082	3082	3082	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIBUTYL-PHTHALATE)			
14.3 Transport hazard class(es)	9	9	9	9
14.4 Packing group	III	III	III	III
Label				
14.5 Environmental hazards	Yes 	Yes 	Yes 	Yes 
14.6 Special precautions for user	no	no	no	no
14.7 Transport in bulk	no	no	no	no
according to Annex II of MARPOL 73/78 and the IBC Code				
Hazard Index Number	90	90	90	90
Marine pollutant		Yes P (Marine Pollutant)		
Other applicable information		EmS: F-A, S-F		

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

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

European Union

Regulation No 1907/2006 /EC of the European Parliament and of the Council, as amended

Regulation No 1272/2008/EC of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation /EC/ No 1907/2006 /1/, as amended

Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives, as amended

Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste, as amended

Czech Republic:

Dibutyl Phthalate

Act No. 350/2011 Coll. Regarding chemical substances and chemical preparations, as well as several other acts, as amended

Act No. 254/2001 Coll., regarding water resources, as amended

Act No. 185/2001 Coll., regarding waste, as amended

Decree of the Czech Ministry of Environmental Protection No. 93/2016 Dig. (Catalogue of Waste)

Act No. 285/2000 Coll. on the protection of public health amending certain related acts, as amended

Government Decree No. 361/2007 Coll. determining the conditions of the protection of health at work, as amended

- The substance is restricted according to Annex XVII of regulation 1907/2006/EC (item 30, 51) The substance is restricted for consumers and using for toys and childcare articles is limited (max. 0,1 % w/w. in plastic).
- The substance is permitted for using as a plasticizer for plastic material intended to come into contact with foodstuffs the with limit by the Direction 2011/10/ES.
- The substance is on Candidate List of SVHC for authorisation
- The substance is subject to authorisation according to Commission Regulation (EU) No 143/2011 amending Annex XIV to Regulation (EC) No 1907/2006:

Transitional arrangements		Exempted (categories of) uses
Latest application date	Sunset date	
21 August 2013	21 February 2015	Uses in the immediate packaging of medicinal products covered under Regulation (EC) No 726/2004, Directive 2001/82/EC, and/or Directive 2001/83/EC.

From the regulation 143/2011 ES follows that, unless permission for the use of substance is not granted, then this use of said date of termination ends.

- The substance was authorized according to Regulation (EC) No 1907/2006:

Decisions granting an authorisation (2016/C 127/05) (See full text: [http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1465903541334&uri=CELEX:52016XC0409\(03\)](http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1465903541334&uri=CELEX:52016XC0409(03)))

Reference of the decision	Substance name	Authorisation number	Date of expiry of review period	Reasons for the decision
Date of decision	Holder of the authorisation	Authorised use		
C(2016) 2003 8 April 2016	Dibutyl phthalate (DBP) EC No 201-557-4 CAS No 84-74-2 / Deza a.s., Masarykova 753, 75728 Valašské Meziříčí, Czech Republic	REACH/16/1/0 The use of DBP as an absorption solvent in a closed system in the manufacture of maleic anhydride	21.2. 2027	Risk is adequately controlled in accordance with Article 60(2) of Regulation (EC) No 1907/2006.
		REACH/16/1/1 The use of DBP in propellants: Formulation: industrial use of DBP as a burning rate surface moderant, plasticiser and/or coolant in the formulation of nitrocellulose-based propellant grains; Use at industrial site: Industrial use of DBP-containing propellant grains in manufacture of ammunition for military and civilian uses, and pyrocartridges for aircraft ejection seat safety systems (includes propellants for police-force ammunition and excludes propellants intended for manual, private reloading of ammunition cartridges by civilian users, i.e., licensed individual sports shooters and hunters. No consumer use of DBP or its mixtures is covered by this use)	21.2. 2027	There are no suitable alternatives at present.
		REACH/16/1/2 The industrial use of DBP in ceramic sheets and printing pastes for production of capacitors and lambda sensor elements	21.2. 2019	After this date, this use only on the downstream user's authorization.



Dibutyl Phthalate

15.2. Chemical Safety Assessment

CSR submitted. Relevant Exposure Scenario in Annex I of the SDS.

Section 16: Other Information

Notice to article 1.2 Submitting downstream user notification of authorised uses (Article 66 of REACH) If you are a downstream user that uses a substance that is on the Authorisation List (Annex XIV) based on an authorisation granted to an applicant up your supply chain, you have to notify your use to ECHA. See <http://echa.europa.eu/cs/support/dossier-submission-tools/reach-it/downstream-user-authorised-use>

Abbreviations and acronyms

SDS – Safety data sheet

CLP - Classification, labelling and packaging (Reg. 1272/2008/EC)

DNEL – Derivate no effect level

PNEC – Predicted no effect concentration

CSR – Chemical safety report

ES – Exposition scenario

RMM – Risk management measure

OC – Operational condition

NR: Not relevant

Nation exposure limit values: <http://limitvalue.ifa.dguv.de/>

Substance	Di-n-butyl phthalate			
CAS No.	84-74-2			
	Limit Value – Eight hours		Limit value – Short term	
	ppm	Mg/m ³	ppm	Mg/m ³
Australia		5		
Austria		5		
Belgium		5		
Canada – Ontario		5		
Canada – Quebec		5		
Denmark		3		6
France		5		
Germany (AGS)	0,05 (1)	0,58 (1)	0,1 (1)(2)	1,16 (1)(2)
Germany (DFG)	0,05 (1)	0,58 (1)	0,1 (1)(2)	1,16 (1)(2)
Ireland		5		10(1)
Japan – JSOH		5		
Latvia		0,5		
New Zealand		5		
People's Republic of China		2,5		
Poland		5		10
Romania		2		5(1)
Singapore		5		
South Korea		5		
Spain		5		
Sweden		3		5(1)
Switzerland	0,05	0,8	0,1	1,16
USA – NIOSH		5		
USA – OSHA		5		
United Kingdom		5		10
Remarks				
Germany (AGS)	(1) Inhalable aerosol and vapour (2) 15 minutes reference period			

Dibutyl Phthalate



Germany (DFG)	(1) Inhalable fraction and vapour (2) 15 minutes reference period
Ireland	(1) 15 minutes reference period
Sweden	(1) Short-term value, 15 minutes average value

Training instructions

Persons who handle the product must be made familiar with its dangerous properties, the principles of the protection of health and the environment against its adverse effects, and with the principles of first aid (Act No. 258/2000 Coll. in the valid wording). This training must be recorded.

Sources of data used while compiling the safety data sheet

Databases: registration dossier submitted to ECHA

Explanatory note (ad Article 8.1): REACH requires manufacturers and importers to establish and report 'Derived No-Effect Levels' (DNEL's) for humans by inhalation, ingestion, and dermal routes of exposure and 'Predicted No-Effect Concentrations' (PNEC's) for environmental exposure.

DNEL's to DBP were established by Risk Assessment Committee (RAC) in March 2013. PNEC's were established by the registrant without an official consultation process by methods determined in the regulation. These limits are not intended to be directly used for setting workplace or general population exposure limits. They are primarily used as input values in running Quantitative Risk Assessment models.

Due to differences in calculation methodology the DNEL will tend to be lower (sometimes significantly) than any corresponding health based OEL for that chemical substance. Further although DNEL's (and PNEC's) are an indication for setting risk reduction measures, it should be recognized that these limits do not have the same regulatory application as officially endorsed governmental OEL's