acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: **P738**Version: **5.0 en**date of compilation: 2015-08-28
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Version: (4)



## 1.1 Product identifier

Identification of the substance **Benzoic acid** ≥99,5 %, p.a., ACS

Article number P738

 Index No (GB CLP)
 607-705-00-8

 EC number
 200-618-2

 CAS number
 65-85-0

Alternative name(s) Phenylformic acid

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

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-

stuffs.

## 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

**Telephone:**+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 **e-mail:** sicherheit@carlroth.de **Website:** www.carlroth.de

sneet

e-mail (competent person): sicherheit@carlroth.de

## 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

United Kingdom (en) Page 1 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



## **SECTION 2: Hazards identification**

## 2.1 Classification of the substance or mixture

## Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.9	Specific target organ toxicity - repeated exposure	1	STOT RE 1	H372

For full text of abbreviations: see SECTION 16

## The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure.

## 2.2 Label elements

## Labelling

Signal word Danger

## **Pictograms**

GHS05, GHS08



## **Hazard statements**

H315 Causes skin irritation H318 Causes serious eye damage

H372 Causes damage to organs (lung) through prolonged or repeated exposure (if in-

haled)

## **Precautionary statements**

## **Precautionary statements - prevention**

P260 Do not breathe dust

P280 Wear protective gloves/eye protection

## **Precautionary statements - response**

P302+P352 IF ON SKIN: Wash with plenty of water

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

P310 Immediately call a POISON CENTER/doctor

## 2.3 Other hazards

## Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0.1\%$ .

United Kingdom (en) Page 2 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



# **SECTION 3: Composition/information on ingredients**

## 3.1 Substances

Name of substance Benzoic acid Molecular formula  $C_7H_6O_2$  Molar mass  $122,1~^g/_{mol}$  CAS No 65-85-0 EC No 200-618-2

## **SECTION 4: First aid measures**

Index No (GB CLP)

## 4.1 Description of first aid measures



## **General notes**

Take off contaminated clothing.

## Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

## **Following skin contact**

Rinse skin with water/shower. In case of skin irritation, consult a physician.

## Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

607-705-00-8

## **Following ingestion**

Rinse mouth. Call a doctor if you feel unwell.

# 4.2 Most important symptoms and effects, both acute and delayed

Irritation, Cough, Headache, Gastrointestinal complaints, Nausea, Vomiting, Diarrhoea, Dyspnoea, Risk of serious damage to eyes, Risk of blindness

## 4.3 Indication of any immediate medical attention and special treatment needed

none

# **SECTION 5: Firefighting measures**

## 5.1 Extinguishing media



## Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

United Kingdom (en) Page 3 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



Combustible. Vapours are heavier than air, spread along floors and form explosive mixtures with air.

## **Hazardous combustion products**

onable distance. Wear self-contained breathing apparatus.



breathe dust.

## 6.2 **Environmental precautions**

of it.

## 6.3

## Advice on how to contain a spill

Covering of drains. Take up mechanically.

## Advice on how to clean up a spill

Take up mechanically. Control of dust.

Place in appropriate containers for disposal. Ventilate affected area.

## Reference to other sections 6.4

patible materials: see section 10. Disposal considerations: see section 13.

# **SECTION 7: Handling and storage**

## 7.1 **Precautions for safe handling**

Provision of sufficient ventilation. Avoid dust formation.

## Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

## Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

## 7.2 Conditions for safe storage, including any incompatibilities

United Kingdom (en) Page 4 / 15



water jet

## 5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

## 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reas-

# **SECTION 6: Accidental release measures**

## 6.1 Personal precautions, protective equipment and emergency procedures



## For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose

## Methods and material for containment and cleaning up

## Other information relating to spills and releases

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incom-

Store in a dry place.

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



Observe hints for combined storage.

Consideration of other advice:

**Ventilation requirements** 

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No information available.

# SECTION 8: Exposure controls/personal protection

## 8.1 **Control parameters**

## **National limit values**

## **Occupational exposure limit values (Workplace Exposure Limits)**

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005

**Notation** 

Ceiling value is a limit value above which exposure should not occur Inhalable fraction Ceiling-C

Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

minute period (unless otherwise specified)

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) TWA

## **Human health values**

## **Relevant DNELs and other threshold levels** Threshold **Endpoint** Protection goal, **Used in Exposure time** level route of exposure **DNEL** 3 mg/m<sup>3</sup> human, inhalatory worker (industry) chronic - systemic effects DNEL 0,1 mg/m<sup>3</sup> human, inhalatory worker (industry) chronic - local effects DNFI 62,5 mg/kg bw/ human, dermal worker (industry) chronic - systemic effects

## **Environmental values**

Relevant	Relevant PNECs and other threshold levels				
End- point	Threshold level	Organism	Environmental com- partment	Exposure time	
PNEC	0,331 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	water	intermittent release	
PNEC	0,34 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	freshwater	short-term (single instance)	

United Kingdom (en) Page 5 / 15



acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



short-term (single instance)

Relevant	Relevant PNECs and other threshold levels				
End- point	Threshold level	Organism	Environmental compartment	Exposure time	
PNEC	0,034 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	marine water	short-term (single instance)	
PNEC	100 <sup>mg</sup> / <sub>l</sub>	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)	
PNEC	1,75 <sup>mg</sup> / <sub>kg</sub>	aquatic organisms	freshwater sediment	short-term (single instance)	
PNEC	0,175 <sup>mg</sup> / <sub>kg</sub>	aquatic organisms	marine sediment	short-term (single instance)	

soil

## 8.2 Exposure controls

**PNEC** 

## Individual protection measures (personal protective equipment)

terrestrial organisms

## **Eye/face protection**





Use safety goggle with side protection.

0,151 <sup>mg</sup>/<sub>kg</sub>

## Skin protection





## hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

## type of material

NBR (Nitrile rubber)

material thickness

>0,11 mm

## breakthrough times of the glove material

>480 minutes (permeation: level 6)

## other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

United Kingdom (en) Page 6 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738

## **Respiratory protection**





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

## **Environmental exposure controls**

Keep away from drains, surface and ground water.

# SECTION 9: Physical and chemical properties

## 9.1 Information on basic physical and chemical properties

Physical state solid

Form powder, crystalline

Colour white

Odour characteristic

Melting point/freezing point 122,4 °C (ECHA)

Boiling point or initial boiling point and boiling

range

249 °C at 1.013 hPa (ECHA)

Flammability this material is combustible, but will not ignite

readily

Lower and upper explosion limit not determined

Flash point 121 °C (c.c.)

Auto-ignition temperature not determined

Decomposition temperature not relevant

pH (value) 2,5 – 3,5 (20 °C) (aqueous solution of the sub-

stance)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility 3,5  $^{9}$ / $_{1}$  at 25  $^{\circ}$ C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 1,88 (ECHA)
Soil organic carbon/water (log KOC) 1,191 (ECHA)

Vapour pressure 0,001 hPa at 20 °C

Density and/or relative density

Density  $1,321 \, {}^{\rm g}/{}_{\rm cm^3}$  at 20 °C (ECHA)

Bulk density  $\sim 500 \text{ kg/m}^3$ 

United Kingdom (en) Page 7 / 15



acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



Particle characteristics No data available.

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics:

Surface tension  $67,5^{\text{mN}}/_{\text{m}}$  (20 °C) (ECHA)

# **SECTION 10: Stability and reactivity**

## 10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

# 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

## 10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Fluorine, Nitrites, Reducing agents, Oxygen, Strong alkali

## 10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

## 10.5 Incompatible materials

There is no additional information.

## 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

# **SECTION 11: Toxicological information**

# 11.1 Information on toxicological effects

## Classification acc. to GHS

## **Acute toxicity**

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed, in contact with skin or if inhaled.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	2.360 <sup>mg</sup> / <sub>kg</sub>	rat		ECHA
inhalation: dust/ mist	LC50	>12.200 <sup>mg</sup> / <sub>m³</sub> /4h	rat		ECHA
dermal	LD50	>2.000 <sup>mg</sup> / <sub>kg</sub>	rabbit		ECHA

United Kingdom (en) Page 8 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



Causes serious eye damage.

## **Germ cell mutagenicity**

Shall not be classified as germ cell mutagenic.

## Carcinogenicity

Shall not be classified as carcinogenic.

Shall not be classified as a reproductive toxicant.

## Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

## Specific target organ toxicity - repeated exposure

Causes damage to organs (lung) through prolonged or repeated exposure (if inhaled).

Hazard category	Target organ	Exposure route
1	lung	if inhaled

## Symptoms related to the physical, chemical and toxicological characteristics

## If swallowed

Causes serious eye damage, risk of blindness

irritant effects, cough, headache, Dyspnoea, varying degrees of pulmonary injury

causes skin irritation

## Other information

## 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

United Kingdom (en) Page 9 / 15



Causes skin irritation.

# Serious eye damage/eye irritation

## Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

## **Reproductive toxicity**

Hazard category	Target organ	Exposure route
1	lung	if inhaled

## **Aspiration hazard**

Shall not be classified as presenting an aspiration hazard.

gastrointestinal complaints, nausea, vomiting, diarrhoea

## • If in eyes

## If inhaled

## • If on skin

none

## 11.3 Information on other hazards

There is no additional information.

acc. to Regulation (EC) No. 1907/2006 (REACH)

Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



# **SECTION 12: Ecological information**

## 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

## **Aquatic toxicity (acute)**

Endpoint	Value	Species	Source	Exposure time
EC50	252 <sup>mg</sup> / <sub>l</sub>	Tetrahymena pyriformis	ECOTOX Database	48 h
LC50	44,6 <sup>mg</sup> / <sub>I</sub>	bluegill	ECHA	96 h
ErC50	>33,1 <sup>mg</sup> / <sub>l</sub>	algae	ECHA	72 h

## **Aquatic toxicity (chronic)**

Endpoint	Value	Species	Source	Exposure time
EC50	>120 <sup>mg</sup> / <sub>l</sub>	rainbow trout (Onco- rhynchus mykiss)	ECHA	28 d
EC50	>25 <sup>mg</sup> / <sub>l</sub>	daphnia magna	ECHA	21 d

## 12.2 Persistence and degradability

Theoretical Oxygen Demand: 1,965  $^{\rm mg}/_{\rm mg}$ Theoretical Carbon Dioxide: 2,523  $^{\rm mg}/_{\rm mg}$ 

## **Process of degradability**

Process	Degradation rate	Time
biotic/abiotic	>70 %	5 d
carbon dioxide generation	89,5 %	35 d

## 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	1,88 (ECHA)

## 12.4 Mobility in soil

The Organic Carbon normalised adsorption coefficient	1,191 (ECHA)
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## 12.5 Results of PBT and vPvB assessment

Data are not available.

## 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

## 12.7 Other adverse effects

Data are not available.

United Kingdom (en) Page 10 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



# **SECTION 13: Disposal considerations**

## 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

## Sewage disposal-relevant information

Do not empty into drains.

## Waste treatment of containers/packagings

Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

## 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

## Properties of waste which render it hazardous

**HP 4** irritant - skin irritation and eye damage

**HP 5** specific target organ toxicity (STOT)/aspiration toxicity

## 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

# **SECTION 14: Transport information**

14.1	UN number or ID number	not subject to transport regulations

**14.2 UN proper shipping name** not assigned

**14.3 Transport hazard class(es)** none

**14.4 Packing group** not assigned

**14.5 Environmental hazards** non-environmentally hazardous acc. to the dan-

gerous goods regulations

## 14.6 Special precautions for user

There is no additional information.

## 14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

## 14.8 Information for each of the UN Model Regulations

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

United Kingdom (en) Page 11 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



# **SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Relevant provisions of the European Union (EU)

## **Seveso Directive**

2012/	2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes	
	not assigned			

## **Deco-Paint Directive**

VOC content	100 %
VOC content	1.321 <sup>g</sup> / <sub>l</sub>

## **Industrial Emissions Directive (IED)**

VOC content	0 %
VOC content	0 <sup>g</sup> / <sub>l</sub>

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

## **Water Framework Directive (WFD)**

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Benzoic acid	Substances and preparations, or the breakdown products of such, which have been proved to pos- sess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine- related functions in or via the aquatic environment		a)	

Legend

a) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

not listed

**Regulation on drug precursors** 

not listed

United Kingdom (en) Page 12 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

not listed

## Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

## **National inventories**

Country	Inventory	Status	
AU	AIIC	substance is listed	
CA	DSL	substance is listed	
CN	IECSC	substance is listed	
EU	ECSI	substance is listed	
EU	REACH Reg.	substance is listed	
JP	CSCL-ENCS	substance is listed	
KR	KECI	substance is listed	
MX	INSQ	substance is listed	
NZ	NZIoC	substance is listed	
PH	PICCS	substance is listed	
TR	CICR	substance is listed	
TW	TCSI	substance is listed	
US	TSCA	substance is listed (ACTIVE)	
VN	NCI	substance is listed	

Legend

Australian Inventory of Industrial Chemicals
Chemical Inventory and Control Regulation
List of Existing and New Chemical Substances (CSCL-ENCS)
Domestic Substances List (DSL)
EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China
National Inventory of Chemical Substances
Korsa Existing Chemicals Inventory AIIC CICR CSCL-ENCS DSL ECSI

**INSQ** 

KECI Korea Existing Chemicals Inventory
NCI National Chemical Inventory
NZIoC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances

Taiwan Chemical Substance Inventory

TCSI TSCA **Toxic Substance Control Act** 

United Kingdom (en) Page 13 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



## 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

# **SECTION 16: Other information**

# Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of ≥ 0,1%.	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes

## **Abbreviations and acronyms**

Abbr.	Descriptions of used abbreviations	
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerr ing the International Carriage of Dangerous Goods by Road)	
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances	
Ceiling-C	Ceiling value	
DGR	Dangerous Goods Regulations (see IATA/DGR)	
DNEL	Derived No-Effect Level	
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval	
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an iden fier of substances commercially available within the EU (European Union)	
ED	Endocrine disruptor	
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)	
EINECS	European Inventory of Existing Commercial Chemical Substances	
ELINCS	European List of Notified Chemical Substances	
ErC50	= EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control	
GB CLP	The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/720 (as amended)	
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)	
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations	
IATA	International Air Transport Association	
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)	
ICAO	International Civil Aviation Organization	
IMDG	International Maritime Dangerous Goods Code	
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008	
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 lethality during a specified time interval	

United Kingdom (en) Page 14 / 15

acc. to Regulation (EC) No. 1907/2006 (REACH)

## Benzoic acid ≥99,5 %, p.a., ACS

article number: P738



Abbr.	Descriptions of used abbreviations
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

## Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

## List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text	
H315	Causes skin irritation.	
H318	Causes serious eye damage.	
H372	Causes damage to organs (lung) through prolonged or repeated exposure (if inhaled).	

# Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

United Kingdom (en) Page 15 / 15