

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Benzaldehyde for synthesis

Revision date: 26.08.2022

Product code: 20012

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Benzaldehyde for synthesis

Substance name: benzaldehyde  
REACH Registration Number: 01-2119455540-44-XXXX  
CAS No: 100-52-7  
Index No: 605-012-00-5  
EC No: 202-860-4

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

#### Use of the substance/mixture

Laboratory chemicals  
Industrial uses: Uses of substances as such or in preparations at industrial sites  
Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name: Fa. Bernd Kraft GmbH  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
e-mail: info@berndkraft.de  
Contact person: Abteilung Produktsicherheit  
e-mail: produktsicherheit@berndkraft.de  
Internet: www.berndkraft.de  
Responsible Department: Abteilung Produktsicherheit  
Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

No data available

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Acute Tox. 4; H332  
Acute Tox. 4; H302  
Skin Irrit. 2; H315  
Eye Irrit. 2; H319  
STOT SE 3; H335  
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

Signal word: Warning

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**Pictograms:**



**Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.  
 H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P302+P352 IF ON SKIN: Wash with plenty of soap and 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.  
 P337+P313 If eye irritation persists: Get medical advice/attention.

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

**3.1. Substances**

Sum formula: C6H5CHO  
 Molecular weight: 106,12 g/mol

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
100-52-7	benzaldehyde			100 %
	202-860-4	605-012-00-5	01-2119455540-44-XXXX	
	Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Aquatic Chronic 3; H332 H302 H315 H319 H335 H412			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
100-52-7	202-860-4	benzaldehyde	100 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = ca. 1430 mg/kg		

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Take off immediately all contaminated clothing and wash it before reuse.

**After inhalation**

Provide fresh air.  
 Call a doctor if you feel unwell.

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**After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.  
Call a doctor if you feel unwell.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of eye irritation consult an ophthalmologist.

**After ingestion**

Rinse mouth immediately and drink plenty of water.  
Call a physician immediately.

**4.2. Most important symptoms and effects, both acute and delayed**

Irritant  
Dyspnoea  
Dizziness  
Dizziness  
Unconsciousness  
Anaesthetic state  
Headache  
Spasms

**4.3. Indication of any immediate medical attention and special treatment needed**

No data available

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

**5.2. Special hazards arising from the substance or mixture**

Combustible liquids  
Hazardous combustion products  
In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>) Carbon monoxide  
Vapours are heavier than air, spread along floors and form explosive mixtures with air.  
Heating causes rise in pressure with risk of bursting.

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
In case of fire and/or explosion do not breathe fumes.  
Avoid contact with skin, eyes and clothes.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Move undamaged containers from immediate hazard area if it can be done safely.  
Use water spray jet to protect personnel and to cool endangered containers.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures

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Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

**6.3. Methods and material for containment and cleaning up**

**For containment**

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

**Advice on protection against fire and explosion**

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Advice on general occupational hygiene**

Keep away from food, drink and animal feedingstuffs.

**Further information on handling**

Take off immediately all contaminated clothing and wash it before reuse.

Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. If handled uncovered, arrangements with local exhaust ventilation have to be used.

**7.2. Conditions for safe storage, including any incompatibilities**

**Requirements for storage rooms and vessels**

Keep container tightly closed.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Further information on storage conditions**

Keep cool. Protect from sunlight.

Protect against: Light

storage temperature < 30°C

**7.3. Specific end use(s)**

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Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**DNEL/DMEL values**

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
100-52-7	benzaldehyde		
Worker DNEL, long-term	inhalation	systemic	9,8 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	local	9,8 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	1,14 mg/kg bw/day
Worker DNEL, acute	dermal	local	1 %
Consumer DNEL, long-term	inhalation	systemic	4,9 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local	4,9 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	0,67 mg/kg bw/day
Consumer DNEL, acute	dermal	local	1 %
Consumer DNEL, long-term	oral	systemic	0,67 mg/kg bw/day

**PNEC values**

CAS No	Substance	
Environmental compartment	Value	
100-52-7	benzaldehyde	
Freshwater	0 mg/l	
Freshwater (intermittent releases)	0,011 mg/l	
Marine water	0 mg/l	
Freshwater sediment	0,004 mg/kg	
Marine sediment	0 mg/kg	
Micro-organisms in sewage treatment plants (STP)	7,59 mg/l	
Soil	0,001 mg/kg	

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

- goggles
- Face protection umbrella

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

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Trade name/designation: KCL 897 Butoject®  
Suitable material: Butyl caoutchouc (butyl rubber) 0,3 mm  
Wearing time with permanent contact: > 480 min

By short-term hand contact  
Trade name/designation: KCL 897 Butoject®  
Suitable material: Butyl caoutchouc (butyl rubber) 0,3 mm  
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Skin protection**

Take off immediately all contaminated clothing and wash it before reuse.  
Wear fire resistant or flame retardant clothing.  
Wash hands and face before breaks and after work and take a shower if necessary.  
Draw up and observe skin protection programme.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.  
Filtering device with filter or ventilator filtering device of type: A

**Environmental exposure controls**

Do not allow to enter into surface water or drains.  
Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.  
Danger of explosion

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	colourless ~ yellow
Odour:	like: Bitter almonds
Odour threshold:	No data available
Melting point/freezing point:	-26 °C
Boiling point or initial boiling point and boiling range:	179 °C
Flammability	
Solid/liquid:	No data available
Gas:	No data available
Lower explosion limits:	1,4 vol. %
Upper explosion limits:	8,5 vol. %
Flash point:	64 °C
Auto-ignition temperature:	190 °C
Decomposition temperature:	No data available
pH-Value:	5,9 (1 g/l)
Viscosity / kinematic:	No data available
Water solubility:	No data available
Solubility in other solvents	
No data available	
Partition coefficient n-octanol/water:	No data available
Vapour pressure: (at 20 °C)	0,8 hPa

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Vapour pressure: (at 50 °C)	6,7 hPa
Density:	1,05 g/cm <sup>3</sup>
Bulk density:	No data available
Relative vapour density:	No data available

**9.2. Other information**

**Information with regard to physical hazard classes**

**Explosive properties**

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

**Self-ignition temperature**

Solid:	No data available
Gas:	No data available

**Oxidizing properties**

No data available

**Other safety characteristics**

Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	100,00 %
Solid content:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
:	No data available
Viscosity / dynamic: (at 25 °C)	1,39 mPa·s
Flow time:	No data available

**Further Information**

No data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

Vapours may form explosive mixtures with air.

**10.2. Chemical stability**

Protect against:  
Light  
Air

**10.3. Possibility of hazardous reactions**

Oxidising agent  
Alkali (lye)  
Alkali metals  
Aluminium  
Phenol  
Oxygen

**10.4. Conditions to avoid**

Protect against: Light  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**10.5. Incompatible materials**

Aluminium  
Iron.  
Plastic articles

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**10.6. Hazardous decomposition products**

SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information**

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

Harmful if swallowed.

Harmful if inhaled.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
100-52-7	benzaldehyde				
	oral	LD50 ca. 1430 mg/kg	Rat	Study report (1982)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (1974)	4 rabbits were dermally exposed
	inhalation vapour	ATE 11 mg/l			
	inhalation dust/mist	ATE 1,5 mg/l			

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye irritation.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation. (benzaldehyde)

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

Repeated exposure may cause skin dryness or cracking.

**11.2. Information on other hazards**

**Endocrine disrupting properties**

No data available

**Other information**

Irritant

Dyspnoea

Dizziness



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Dizziness  
Unconsciousness  
Anaesthetic state  
Headache  
Spasms

**Further information**

No data available

**SECTION 12: Ecological information**

**12.1. Toxicity**

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
100-52-7	benzaldehyde					
	Acute fish toxicity	LC50 mg/l	12,4	96 h	Pimephales promelas	Publication (1985) other: ASTM E729, 1980
	Acute algae toxicity	ErC50 mg/l	33,1	72 h	Pseudokirchneriella subcapitata	REACH Registration Dossier OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	19,7	48 h	Daphnia magna	Study report (2019) OECD Guideline 202
	Fish toxicity	NOEC mg/l	0,22	7 d	Pimephales promelas	REACH Registration Dossier The fathead minnow

**12.2. Persistence and degradability**

66 %; 14 d  
Readily biodegradable (according to OECD criteria).

**12.3. Bioaccumulative potential**

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
100-52-7	benzaldehyde	1,4

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.  
No data available

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.  
No data available

**12.7. Other adverse effects**

Do not allow to enter into surface water or drains.  
Avoid release to the environment.

**Further information**

No data available

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations.

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Do not allow to enter into surface water or drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

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

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 1990
<b>14.2. UN proper shipping name:</b>	BENZALDEHYDE
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Classification code:	M11
Limited quantity:	5 L
Excepted quantity:	E1
Transport category:	3
Hazard No:	90
Tunnel restriction code:	E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 1990
<b>14.2. UN proper shipping name:</b>	BENZALDEHYDE
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Classification code:	M11
Limited quantity:	5 L
Excepted quantity:	E1

**Marine transport (IMDG)**

<b>14.1. UN number or ID number:</b>	UN 1990
<b>14.2. UN proper shipping name:</b>	BENZALDEHYDE
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Special Provisions:	-
Limited quantity:	5 L
Excepted quantity:	E1
EmS:	F-A, S-A

**Air transport (ICAO-TI/IATA-DGR)**

<b>14.1. UN number or ID number:</b>	UN 1990
<b>14.2. UN proper shipping name:</b>	BENZALDEHYDE
<b>14.3. Transport hazard class(es):</b>	9
<b>14.4. Packing group:</b>	III
Hazard label:	9
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y964
Excepted quantity:	E1
IATA-packing instructions - Passenger:	964
IATA-max. quantity - Passenger:	100 L
IATA-packing instructions - Cargo:	964
IATA-max. quantity - Cargo:	220 L

**14.5. Environmental hazards**

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ENVIRONMENTALLY HAZARDOUS: No

#### SECTION 15: Regulatory information

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

###### EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

###### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

#### SECTION 16: Other information

##### Changes

This data sheet contains changes from the previous version in section(s): 1,2,15.

##### Relevant H and EUH statements (number and full text)

H302	Harmful if swallowed.
H302+H332	Harmful if swallowed or if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

##### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.