

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Test fluid group 8a for aliphatic aldehydes and their aqueous solutions (including grp. 8) according

Revision date: 15.03.2023 Product code: 21879 Page 1 of 12

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

1.1. Product identifier

Test fluid group 8a for aliphatic aldehydes and their aqueous solutions (including grp. 8) according

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

Use of the substance/mixture

Laboratory chemical

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: AnalytiChem GmbH Street: Stempelstraße 6 Place: D-47167 Duisburg

Telephone: 0203/5194-0 Telefax: 0203/5194-290

e-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117

e-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de
Responsible Department: Abteilung Produktsicherheit

<u>1.4. Emergency telephone</u> For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,

<u>number:</u> 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

This product is a mixture. REACH Registration Number see section 3.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flam. Liq. 2; H225 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

heptanal

Signal word: Danger

Pictograms:









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Hazard statements

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.H335 May cause respiratory irritation.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smokina.

P273 Avoid release to the environment.

P391 Collect spillage.

P403+P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name	Chemical name			
	EC No	Index No	REACH No		
	Classification (Regulation (EC) No	1272/2008)			
123-72-8	butyraldehyde			50 - < 55 %	
	204-646-6	605-006-00-2			
	Flam. Liq. 2, Eye Irrit. 2; H225 H319				
111-71-7	heptanal			50 - < 55 %	
	203-898-4				
	Flam. Liq. 3, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Aquatic Acute 1, Aquatic Chronic 1; H226 H315 H319 H335 H400 H410				

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. L	Specific Conc. Limits, M-factors and ATE			
123-72-8	204-646-6	butyraldehyde	50 - < 55 %		
	inhalation: LC50 = > 5,46 mg/l (vapours); oral: LD50 = ca. 5890 mg/kg				
111-71-7	203-898-4	heptanal	50 - < 55 %		
	dermal: LD50 = > 5000 mg/kg; oral: LD50 = > 5000 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

No data available

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.

In case of skin irritation, consult a physician.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Remove contact lenses, if present and easy to do. Continue rinsing.

After indestion

Rinse mouth immediately and drink plenty of water.

Call a physician immediately.

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

Irritant

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

Water spray jet, Carbon dioxide (CO2), Foam, Extinguishing powder.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquid.

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

Hazardous combustion products

In case of fire may be liberated: Carbon dioxide (CO2), Carbon monoxide

Beware of reignition.

5.3. Advice for firefighters

Remove persons to safety. Do not inhale explosion and combustion gases.

Avoid contact with skin, eyes and clothes.

In case of fire: Wear self-contained breathing apparatus.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Use water spray jet to protect personnel and to cool endangered containers.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.



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Remove persons to safety.

Emergency procedures

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

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

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

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

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.



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Hints on joint storage

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

Further information on storage conditions

Vapours may form explosive mixtures with air. storage temperature +5°C - +25°C.

7.3. Specific end use(s)

Laboratory use Laboratory chemical

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance				
DNEL type		Exposure route	Effect	Value	
111-71-7	heptanal				
Consumer DNEL, long-term		oral	systemic	3 mg/kg bw/day	
Worker DNEL, long-term		inhalation	systemic	21,14 mg/m³	
Worker DNEL, long-term		dermal	systemic	6 mg/kg bw/day	
Consumer DNEL, long-term		inhalation	systemic	10,57 mg/m³	
Consumer DNEL, long-term		dermal	systemic	3 mg/kg bw/day	

PNEC values

CAS No	Substance			
Environmenta	I compartment	Value		
111-71-7	heptanal			
Freshwater		0,006 mg/l		
Freshwater (intermittent releases)		0,029 mg/l		
Marine water		0,001 mg/l		
Freshwater sediment		0,079 mg/kg		
Marine sediment		0,008 mg/kg		
Micro-organisms in sewage treatment plants (STP)				
Soil	0,012 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

Suitable eye protection: goggles.

Hand protection

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

By long-term hand contact: No data available



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By short-term hand contact

Trade name/designation: KCL 898 Butoject®

Suitable material: Butyl caoutchouc (butyl rubber) 0,7 mm Wearing time with occasional contact (splashes): > 60 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

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

Environmental exposure controls

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Colour: colourless
Odour: characteristic

Melting point/freezing point:

No data available
Boiling point or initial boiling point and

>35 °C

boiling range:

Flammability: not applicable

not applicable

Lower explosion limits:

Upper explosion limits:

No data available

No data available

Flash point: <21 °C
Auto-ignition temperature: No data available

Decomposition temperature:

pH-Value:

Viscosity / kinematic:

not determined

No data available

No data available

Water solubility: easily soluble

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:

Vapour pressure:

Vapour pressure:

No data available

Vapour pressure:

No data available

No data available

No data available

No data available

O,82 g/cm³

Bulk density:

No data available

Relative vapour density:

not determined

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Vapours can form explosive mixtures with air.



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Sustaining combustion: Sustaining combustion

Self-ignition temperature

Solid: not applicable
Gas: not applicable

Oxidizing properties Not oxidising.

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available
Solvent content:

No data available
Solid content:

No data available
Sublimation point:

No data available
Softening point:

No data available
Pour point:

No data available
No data available

No data available:

Viscosity / dynamic:

No data available

Flow time:

No data available

Further Information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable.

Vapours can form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

Hazardous combustion products

In case of fire may be liberated: Carbon dioxide (CO2), Carbon monoxide

Further information

No data available

SECTION 11: Toxicological information

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

Acute toxicity

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



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CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
123-72-8	butyraldehyde					
	oral	LD50 mg/kg	ca. 5890	Rat	Publication (1951)	OECD Guideline 401
	inhalation (4 h) vapour	LC50 mg/l	> 5,46	Rat	Study report (1981)	OECD Guideline 403
111-71-7	heptanal					
	oral	LD50 mg/kg	> 5000	Rat	Study report (1974)	OECD Guideline 401
	dermal	LD50 mg/kg	> 5000	Rabbit	Study report (1974)	OECD Guideline 402

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. (heptanal)

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.

Specific effects in experiment on an animal

There are no data available on the mixture itself.

Additional information on tests

There are no data available on the mixture itself.

Practical experience

There are no data available on the mixture itself.

11.2. Information on other hazards

Other information

Irritant

Further information

There are no data available on the mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.



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CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
123-72-8	butyraldehyde						
	Acute fish toxicity	LC50 mg/l	25,8	96 h	Pimephales promelas	Publication (1981)	other: EPA-660/3-75-00 9
111-71-7	heptanal						
	Acute fish toxicity	LC50	12 mg/l	96 h	Oncorhynchus mykiss	Study report (1982)	OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	0,42	72 h	Pseudokirchneriella subcapitata	Study report (2010)	OECD Guideline 201
	Crustacea toxicity	NOEC mg/l	> 0,819	21 d	Daphnia magna	Study report (2016)	OECD Guideline 211
	Acute bacteria toxicity	(EC50 mg/l)	580		activated sludge of a predominantly domestic sewag	Study report (2010)	OECD Guideline 209

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
123-72-8	butyraldehyde	1,3
111-71-7	heptanal	2,8

BCF

CAS No	Chemical name	BCF	Species	Source
123-72-8	butyraldehyde	3,162	Estimation by Calculation	Study report (2007)

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

The product has not been tested.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

There are no data available on the mixture itself.

Further information

Avoid release to the environment.

Do not empty into drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains.

Dispose of waste according to applicable legislation.

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.



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Contaminated packaging

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

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

SECTION 14: Transport information

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Lanu	transi	DOLL	Aυ	K/KI	וט

14.1. UN number or ID number: UN 1989

14.2. UN proper shipping name: ALDEHYDES, N.O.S. (butyraldehyde, heptanal)

14.3. Transport hazard class(es): 3 Ш 14.4. Packing group: Hazard label: 3 Classification code: F1 Special Provisions: 274 640D Limited quantity: 1 I Excepted quantity: E2 Transport category: 2 Hazard No: 33 Tunnel restriction code: D/F

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1989

14.2. UN proper shipping name: ALDEHYDES, N.O.S. (butyraldehyde, heptanal)

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Classification code:F1Special Provisions:274 640DLimited quantity:1 LExcepted quantity:E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 1989

14.2. UN proper shipping name: ALDEHYDES, N.O.S. (butyraldehyde, heptanal)

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Special Provisions:274Limited quantity:1 LExcepted quantity:E2EmS:F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1989

14.2. UN proper shipping name: ALDEHYDES, N.O.S. (butyraldehyde, heptanal)

14.3. Transport hazard class(es):314.4. Packing group:IIHazard label:3Special Provisions:A3Limited quantity Passenger:1 LPassenger LQ:Y341Excepted quantity:E2

IATA-packing instructions - Passenger: 353
IATA-max. quantity - Passenger: 5 L



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IATA-packing instructions - Cargo: 364
IATA-max. quantity - Cargo: 60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes

Danger releasing substance: heptanal

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

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, Entry 40, Entry 75

Information according to 2012/18/EU

E1 Hazardous to the Aquatic Environment

(SEVESO III):

Additional information: P5c

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile

work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or

nursing mothers.

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.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
STOT SE 3; H335	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method



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Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

H410 Very toxic 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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)