

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 30.05.2017

Version 2.6

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No. 820798

Product name 2-Methylfuran (stabilised) for synthesis

REACH Registration Number A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. 534-22-5

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

Identified uses Chemical for synthesis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheetResponsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

Regional representation Merck Chemicals Ltd * Boulevard Industrial Park * Padge Road *
Beeston * Nottingham * NG9 2JR * Tel. 01159 430840 *
information@merckchem.co.uk.

1.4 Emergency telephone number +49 (0) 6151 722440

SECTION 2. Hazards identification**2.1 Classification of the substance or mixture**

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Classification (REGULATION (EC) No 1272/2008)

Flammable liquid, Category 2, H225

Acute toxicity, Category 3, Oral, H301

Acute toxicity, Category 2, Inhalation, H330

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H330 Fatal if inhaled.

Precautionary statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

Response

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Storage

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

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H301 Toxic if swallowed.

H330 Fatal if inhaled.

Precautionary statements

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

CAS-No. 534-22-5

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula C₅H₆O (Hill)
EC-No. 208-594-5
Molar mass 82.10 g/mol

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
2-Methylfuran (>= 50 % - <= 100 %)		
534-22-5	*)	

Flammable liquid, Category 2, H225

Acute toxicity, Category 3, H301

Acute toxicity, Category 2, H330

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Shortness of breath, Headache, Nausea, Discomfort, Convulsions

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Combustible.

Vapours are heavier than air and may spread along floors.

Pay attention to flashback.

Forms explosive mixtures with air at ambient temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.40 mm
Break through time:	> 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 730 Camatril® -Velours (splash contact).

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).

Other protective equipment

Flame retardant antistatic protective clothing.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

Risk of explosion.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	ether-like
Odour Threshold	26.4 ppm
pH	No information available.
Melting point	-89 °C
Boiling point/boiling range	63 - 66 °C at 1,013 hPa
Flash point	-27 °C Method: DIN 51794
Evaporation rate	No information available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	139 hPa at 20 °C
Relative vapour density	No information available.
Density	0.91 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	3,000 mg/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: 1.85 (experimental) Bioaccumulation is not expected. (Lit.)
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	4 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

none

SECTION 10. Stability and reactivity

10.1 Reactivity

Vapours may form explosive mixture with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Stabilizer

butyl hydroxytoluene (BHT)

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

Strong oxidizing agents

Violent reactions possible with:

fire-promoting substances, Strong acids, Strong bases, Amines, Isocyanates

10.4 Conditions to avoid

Warming.

10.5 Incompatible materials

various plastics

10.6 Hazardous decomposition products

no information available

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 167 mg/kg

(External MSDS)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Acute inhalation toxicity

LC50 Rat: 1.7 mg/l; 4 h ; vapour

Symptoms: mucosal irritations, Shortness of breath
(RTECS)

Acute dermal toxicity

This information is not available.

Skin irritation

This information is not available.

Eye irritation

This information is not available.

Sensitisation

This information is not available.

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

(Lit.)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

After absorption:

Headache, Nausea, Discomfort, drop in blood pressure, Convulsions

Possible damages:

Damage to:

Liver, Kidney, Central nervous system

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Leuciscus idus* (Golden orfe): 237 mg/l; 48 h
(ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 888 mg/l; 24 h
(ECOTOX Database)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 1.85

(experimental)

Bioaccumulation is not expected. (Lit.)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Henry constant

600.7 Pa*m³/mol

Method: (calculated)

(Lit.) Distribution preferentially in air.

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

Notice Directive on waste 2008/98/EC.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 2301
14.2 Proper shipping name	2-METHYLFURAN
14.3 Class	3
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	D/E

Inland waterway transport (ADN)

Not relevant

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

Air transport (IATA)

14.1 UN number UN 2301
14.2 Proper shipping name 2-METHYLFURAN
14.3 Class 3
14.4 Packing group II
14.5 Environmentally hazardous --
14.6 Special precautions for user no

Sea transport (IMDG)

14.1 UN number UN 2301
14.2 Proper shipping name 2-METHYLFURAN
14.3 Class 3
14.4 Packing group II
14.5 Environmentally hazardous --
14.6 Special precautions for user yes

EmS F-E S-D

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard SEVESO III
Legislation ACUTE TOXIC
H2
Quantity 1: 50 t
Quantity 2: 200 t

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

SEVESO III
FLAMMABLE LIQUIDS
P5c
Quantity 1: 5,000 t
Quantity 2: 50,000 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) 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 $\geq 0.1\%$ (w/w).

National legislation

Storage class 3

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 820798
Product name 2-Methylfuran (stabilised) for synthesis

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H330 Fatal if inhaled.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H330 Fatal if inhaled.

Precautionary statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240 Ground/bond container and receiving equipment.

Response

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Storage

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	820798
Product name	2-Methylfuran (stabilised) for synthesis

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.