

Safety Data Sheet

according to UK REACH Regulation

3-MPA

Revision date: 19.09.2018

Product code: RL-1000

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

3-MPA

Further trade names3-Mercaptopropanoic acid
3-Mercaptopropionic acid
3-MPSAbbreviation: MPA
REACH Registration Number: 01-2119489443-30-XXXX
CAS No: 107-96-0
EC No: 203-537-0**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Laboratory chemical. Manufacture of the substance.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheetCompany name: Iris Biotech GmbH
Street: Adalbert-Zoellner-Straße 1
Place: D-95615 Marktredwitz, Germany
Post-office box: 568
D-95605 Marktredwitz, Germany
Telephone: +49 9231 97121 0
Telefax: +49 9231 97121 99
e-mail: info@iris-biotech.de
Contact person: Compliance Department
Telephone: +49 9231 97121 0
e-mail: sds@iris-biotech.de
Internet: www.iris-biotech.de
Responsible Department: Only available during office hours.**1.4. Emergency telephone number:** +49 (0)89 19240 (POISON CENTER Munich: 24 h)**Further Information**

Emergency telephone: 24 h

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**Hazard categories:
Substance or mixture corrosive to metals: Met. Corr. 1
Acute toxicity: Acute Tox. 2
Acute toxicity: Acute Tox. 3
Skin corrosion/irritation: Skin Corr. 1B
Serious eye damage/eye irritation: Eye Dam. 1
Hazardous to the aquatic environment: Aquatic Chronic 2
Hazard Statements:
Toxic if swallowed.
Causes severe skin burns and eye damage.
Fatal if inhaled.
May be corrosive to metals.
Causes serious eye damage.

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Toxic to aquatic life with long lasting effects.

2.2. Label elements**GB CLP Regulation****Signal word:** Danger**Pictograms:****Hazard statements**

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P234	Keep only in original packaging.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P284	Wear respiratory protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310	Immediately call a POISON CENTER/doctor.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER/doctor.
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.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P406	Store in a corrosion-resistant container with a resistant inner liner.
P501	Dispose of contents/container to an approved disposal site.

Additional advice on labelling

Warning - substance not yet tested completely.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1. Substances****Chemical characterization**

3-Mercaptopropanoic acid

Sum formula:	C ₃ H ₆ O ₂ S
Molecular weight:	106,14 g/mol

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Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
107-96-0	3-Mercaptopropionic acid			<= 100 %
	203-537-0		01-2119489443-30-XXXX	
	Met. Corr. 1, Acute Tox. 2, Acute Tox. 3, Skin Corr. 1B, Eye Dam. 1, Aquatic Chronic 2; H290 H330 H301 H314 H318 H411			

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		
107-96-0	203-537-0	3-Mercaptopropionic acid	<= 100 %
	inhalation: LC50 = 1,8 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); oral: LD50 = 63 - 126 mg/kg		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Provide fresh air. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately. Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

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

After contact with skin

Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary. After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. Take victim immediately to hospital.

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

After contact with eyes

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.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person or a person with cramps.

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

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Water spray. alcohol resistant foam. Dry

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extinguishing powder. Carbon dioxide (CO₂). Sand.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Non-flammable. Thermal decomposition can lead to the escape of irritating gases and vapours.

In case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide (CO). Nitrogen oxides (NO_x). Sulfur oxides.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.

Do not allow entering drains or surface water. Usual measures for fire prevention.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****General measures**

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with skin, eyes and clothes.

Wear personal protection equipment.

In case of fire: Evacuate area.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

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

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal. Take up mechanically, placing in appropriate containers for disposal. Avoid dust formation.

Clear contaminated areas thoroughly.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

Treat the recovered material as prescribed in the section on waste disposal.

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray.

Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

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

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drink. Avoid contact with skin, eyes and clothes. Provide adequate ventilation. When using do not eat, drink or smoke. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Unsuitable container/equipment material: Metal. Keep container tightly closed in a cool, well-ventilated place. Handle and store contents under inert gas. Protect from moisture. storage temperature: room temperature

Hints on joint storage

No special measures are necessary.

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
DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
107-96-0	3-Mercaptopropionic acid			
Worker DNEL, long-term		inhalation	systemic	2,08 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,59 mg/kg bw/day

PNEC values

CAS No	Substance	Value
107-96-0	3-Mercaptopropionic acid	
Freshwater		0,009 mg/l
Freshwater (intermittent releases)		0,09 mg/l
Marine water		0,0009 mg/l
Freshwater sediment		0,007 mg/kg
Marine sediment		0,001 mg/kg
Micro-organisms in sewage treatment plants (STP)		3,933 mg/l
Soil		0,002 mg/kg

Additional advice on limit values

To date, no national critical limit values exist.

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

Individual protection measures, such as personal protective equipment

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Eye/face protection

Suitable eye protection: goggles. Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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. Wear suitable gloves.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

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.

Skin protection

Wear suitable protective clothing. Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

Environmental exposure controls

Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	clear, colourless
Odour:	rotten

Test method
Changes in the physical state

Melting point/freezing point:	16-18 °C	OECD 102
Boiling point or initial boiling point and boiling range:	> 185 °C	
Sublimation point:	not determined	
Softening point:	not determined	
Flash point:	124,5 °C	

Flammability

Solid/liquid:	not applicable
Gas:	not applicable

Explosive properties

The product is not explosive.

Lower explosion limits:	1,6 vol. %
Upper explosion limits:	not determined
Auto-ignition temperature:	350 °C

Self-ignition temperature

Solid:	not applicable
Gas:	not applicable

Decomposition temperature:	not determined
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Oxidizing properties

Not oxidising.

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pH-Value (at 20 °C):	2,2 (100 g/l) DIN 19268
Viscosity / dynamic:	not determined
Viscosity / kinematic: (at 20 °C)	7,875 mm ² /s DIN 51562
Flow time:	not determined
Water solubility:	> 607 g/L OECD 105
Solubility in other solvents	
Soluble in: Ether, Alcohol.	
Partition coefficient n-octanol/water:	not determined
Vapour pressure: (at 20 °C)	ca. 0,022 hPa
Density (at 20 °C):	1,215 - 1,225 g/cm ³ DIN 51757
Bulk density:	not applicable
Relative vapour density:	not determined

9.2. Other information**Information with regard to physical hazard classes**

Sustaining combustion: No data available

Other safety characteristics

Solid content: not determined

Evaporation rate: not determined

Further Information**SECTION 10: Stability and reactivity****10.1. Reactivity**

Corrosive to metals.
Forms explosive mixtures with air at elevated temperatures.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

Protect from moisture.
Keep away from heat.

10.5. Incompatible materials

Keep away from: Metal.
Oxidizing agents, strong.
Reducing agents.
Bases, strong.

10.6. Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours.
In case of fire may be liberated: Carbon dioxide (CO₂). Carbon monoxide (CO). Nitrogen oxides (NO_x). Sulfur oxides.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation**

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Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Fatal if inhaled.

Toxic if swallowed.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
107-96-0	3-Mercaptopropionic acid				
	oral	LD50 mg/kg	63 - 126	Rat	Study report (1973) OECD Guideline 401
	inhalation vapour	LC50	1,8 mg/l	Rat	OECD 403
	inhalation aerosol	ATE	0,05 mg/l		

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

Skin corrosion/irritation:

Result: strongly corrosive.

Method: 2000/33/EG, annexe I, B40

3-Mercaptopropanoic acid, 99 %

Eye irritation:

eyes - Rabbit.

Result: Risk of serious damage to eyes.

Risk of blindness!

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.

Ames test negative.

OECD 471 (Ames test)

Gene-mutations mammalian cells

Result: In vitro mutagenicity negative.

OECD 476

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

STOT-single exposure

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

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

No data available

Additional information on tests

Special hazards arising from the substance or mixture. Classification according to Regulation (EC) No 1272/2008 [CLP]: health hazard properties.

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Practical experience

No data available

11.2. Information on other hazards
Other information

Cough, shortage of breath. Nausea

Further information

RTECS: UF5270000

Caution! To the best of our knowledge the toxicological properties of this material have not been thoroughly investigated.

SECTION 12: Ecological information
12.1. Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
107-96-0	3-Mercaptopropionic acid					
	Acute fish toxicity	LC50 98 mg/l	96 h	Danio rerio	Study report (2000)	OECD Guideline 203
	Acute algae toxicity	ErC50 26 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2008)	OECD Guideline 201
	Acute crustacea toxicity	EC50 9 mg/l	48 h	Daphnia magna	Study report (2000)	OECD Guideline 202
	Acute bacteria toxicity	(393,3 mg/l)	3 h	activated sludge, domestic	Study report (2009)	OECD Guideline 209

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
107-96-0	3-Mercaptopropionic acid	-2,32

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.7. Other adverse effects

Warning - substance not yet tested completely.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Discharge into the environment must be avoided.

SECTION 13: Disposal considerations
13.1. Waste treatment methods
Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation. Dispose of waste according to applicable legislation.

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Consult the appropriate local waste disposal expert about waste disposal.



Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself. Handle contaminated packages in the same way as the substance itself.



SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (3-Mercaptopropionic acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
	 
Classification code:	CT1
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	86
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (3-Mercaptopropionic acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
	 
Classification code:	CT1
Special Provisions:	274 802
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (3-Mercaptopropionic acid)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1
	 
Marine pollutant:	NO
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2

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EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 2922
14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (3-Mercaptopropionic acid)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
Hazard label: 8+6.1



Special Provisions: A3 A803
Limited quantity Passenger: 0.5 L
Passenger LQ: Y840
Excepted quantity: E2
IATA-packing instructions - Passenger: 851
IATA-max. quantity - Passenger: 1 L
IATA-packing instructions - Cargo: 855
IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Toxic. strongly corrosive.

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

2004/42/EC (VOC): 100 % (1218 g/l)
Information according to 2012/18/EU (SEVESO III): H2 ACUTE TOXIC
Additional information: E2

Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

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

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

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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%

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H411	Toxic to aquatic life with long lasting effects.

Further Information

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. Warning - substance not yet tested completely.

The product is intended for research, analysis and scientific education.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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 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.