

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H₂O

Revision date: 20.12.2019

Product code: HAA1080

Page 1 of 10

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**H-L-Cys-OH*HCl*H₂O**Further trade names**

L-Cysteine hydrochloride monohydrate
(2R)-2-amino-3-sulfanyl-propanoic acid hydrochloride monohydrate
(+)-(R)-2-Amino-3-sulfanylpropionsäure hydrochlorid

Abbreviation: C
CAS No: 7048-04-6
EC No: 200-157-7

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 sheet

Company name:	Iris Biotech GmbH	
Street:	Adalbert-Zoellner-Straße 1	
Place:	D-95615 Marktrechwitz, Germany	
Post-office box:	568	
	D-95605 Marktrechwitz, 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:
Serious eye damage/eye irritation: Eye Irrit. 2
Hazard Statements:
Causes serious eye irritation.

2.2. Label elements**GB CLP Regulation****Signal word:** Warning**Pictograms:**

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H₂O

Revision date: 20.12.2019

Product code: HAA1080

Page 2 of 10

Hazard statements

H319 Causes serious eye irritation.

Precautionary statements

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

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.

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

L-Cysteine hydrochloride monohydrate

Sum formula: C₃H₇NO₂S*HCl*H₂O

Molecular weight: 121,2*36,5*18,1 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7048-04-6	L-Cysteine hydrochloride monohydrate			<= 100 %
	200-157-7		01-2119978306-28-XXXX	
	Eye Irrit. 2; H319			

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	
7048-04-6	200-157-7	L-Cysteine hydrochloride monohydrate	<= 100 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2000 mg/kg		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

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. 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

Wash with plenty of water. Take off contaminated clothing and wash it before reuse.

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

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H2O

Revision date: 20.12.2019

Product code: HAA1080

Page 3 of 10

After contact with eyes

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

After ingestion

Rinse mouth immediately and drink plenty of water.

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 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).

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Wear a self-contained breathing apparatus and chemical protective clothing.

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**

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. 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**

Take up mechanically. 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.

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H₂O

Revision date: 20.12.2019

Product code: HAA1080

Page 4 of 10

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

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 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.

Further information on handling

Sensitive to air
Photosensitive.

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

Keep container tightly closed. 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****Additional advice on limit values**

To date, no national critical limit values exist.

8.2. Exposure controls**Appropriate engineering controls**

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

Individual protection measures, such as personal protective equipment**Eye/face protection**

Suitable eye protection: goggles.

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

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H₂O

Revision date: 20.12.2019

Product code: HAA1080

Page 5 of 10

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.

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:	solid
Colour:	white/ yellowish
Odour:	characteristic

Test method

Changes in the physical state

Melting point/freezing point:	64 °C	OECD 102
Boiling point or initial boiling point and boiling range:	not determined	
Sublimation point:	not determined	
Softening point:	not determined	
:	No data available	
Flash point:	No data available	

Flammability

Solid/liquid:	Flammability and burning behaviour of dust layers:
	burning number (BZ): 2 (20 °C) °C
Gas:	not applicable

Explosive properties

Dust explosive, Dust explosion category: ST 1
 KSt-value: 64
 Maximum explosion pressure: 6,9 bar
 Minimum ignition energy: > 1000 mJ (with inductance)

Lower explosion limits:	125 g/m ³
Upper explosion limits:	not determined
Auto-ignition temperature:	380 °C

Self-ignition temperature

Solid:	not determined
Gas:	not applicable

Decomposition temperature:	110 °C
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Oxidizing properties

No data available

pH-Value (at 20 °C):	0,8 - 1,2	100 g/l
Viscosity / dynamic:	not applicable	
Viscosity / kinematic:	not applicable	
Flow time:	not applicable	

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H2O

Revision date: 20.12.2019

Product code: HAA1080

Page 6 of 10

Water solubility: 650 g/L
(at 20 °C)

Solubility in other solvents

not determined

Partition coefficient n-octanol/water:

log Pow: -2,2 (23 °C)

Vapour pressure:

< 0,1 hPa

(at 20 °C)

Density:

1,54 g/cm³ OECD 109

Bulk density:

800 kg/m³

Relative vapour density:

not determined

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

Sustaining combustion:

No data available

Other safety characteristics

Solvent content:

No data available

Solid content:

not determined

Evaporation rate:

not determined

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

Danger of dust explosion.

10.2. Chemical stability

Stable under recommended storage conditions.

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

Oxidizing agents, 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).**Further information**

In case of fire: See chapter 5.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution**

No data available

Acute toxicity

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

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H2O

Revision date: 20.12.2019

Product code: HAA1080

Page 7 of 10

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7048-04-6	L-Cysteine hydrochloride monohydrate				
	oral	LD50 > 2000 mg/kg	Rat		OECD 423
	dermal	LD50 > 2000 mg/kg	Rat		OECD 402

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

In vitro skin test

Result: negative

OECD 439

Eye irritation:

In vitro eye test

Result: positive

OECD 492

Causes serious eye irritation.

Sensitising effects

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

Method: OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) Species: Mouse Result:

negative. Literature: ECHA Dossier

Carcinogenic/mutagenic/toxic effects for reproduction

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

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.

Germ cell mutagenicity:

Genotoxicity in vivo

Chromosomal aberrations mammalian cells - Mouse., male

Result: negative

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

Classification according to Regulation (EC) No 1272/2008 [CLP]: health hazard properties

Practical experience

No data available

Further information

RTECS: No data available

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

Handle in accordance with good industrial hygiene and safety practice.

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H₂O

Revision date: 20.12.2019

Product code: HAA1080

Page 8 of 10

SECTION 12: Ecological information

12.1. Toxicity

No data available

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
7048-04-6	L-Cysteine hydrochloride monohydrate					
	Acute fish toxicity	LC50 > 100 mg/l	96 h	Danio rerio (Zebrafish)		OECD 203
	Acute crustacea toxicity	EC50 > 100 mg/l	48 h	Daphnia magna (Big water flea)		OECD 202
	Acute bacteria toxicity	(360 mg/l)	3 h	Activated sludge, OECD 209		

12.2. Persistence and degradability

No data available

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
7048-04-6	L-Cysteine hydrochloride monohydrate			
	OECD 301A	95,5 %	9	
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
7048-04-6	L-Cysteine hydrochloride monohydrate	-2,2

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

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

12.7. Other adverse effects

Warning - substance not yet tested completely.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Dispose of waste according to applicable legislation.

Consult the appropriate local waste disposal expert about waste disposal.

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

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H2O

Revision date: 20.12.2019

Product code: HAA1080

Page 9 of 10

Land transport (ADR/RID)**14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.**Inland waterways transport (ADN)****14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.**Marine transport (IMDG)****14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.**Air transport (ICAO-TI/IATA-DGR)****14.2. UN proper shipping name:** No dangerous good in sense of these transport regulations.**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No information available.

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**

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory informationEmployment 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**15.2. Chemical safety assessment**

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

SECTION 16: Other information**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%
CLP: Classification, labelling and Packaging
REACH: Registration, Evaluation and Authorization of Chemicals
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals
UN: United Nations
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LL50: Lethal loading, 50%

Safety Data Sheet

according to UK REACH Regulation

H-L-Cys-OH*HCl*H₂O

Revision date: 20.12.2019

Product code: HAA1080

Page 10 of 10

EL50: Effect loading, 50%
EC50: Effective Concentration 50%
ErC50: Effective Concentration 50%, growth rate
NOEC: No Observed Effect Concentration
BCF: Bio-concentration factor
PBT: persistent, bioaccumulative, toxic
vPvB: very persistent, very bioaccumulative
RID: Regulations concerning the international carriage of dangerous goods by rail
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation
intérieures)
EmS: Emergency Schedules
MFAG: Medical First Aid Guide
ICAO: International Civil Aviation Organization
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
IBC: Intermediate Bulk Container
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

Relevant H and EUH statements (number and full text)

H319 Causes serious eye irritation.

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.