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

1.1. Product identifier

Alumin acet-tart solutio

Item No. 21450100

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

Use of the substance/preparation

Active pharmacutical substance

1.3. Details of the supplier of the safety data sheet

Address/Manufacturer

Hänseler AG
Industriestrasse 35
9100 Herisau

Telephone no.	0041 (0)71 353 58 58
E-mail address of person responsible for this SDS	sdb@haenseler.ch

1.4. Emergency telephone number

Switzerland :145 / Abroad +41 (0)44 251 51 51

SECTION 2: Hazards identification ***

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Eye Dam. 1 H318

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Danger

Hazard statements

H318	Causes serious eye damage.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face 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.
P310	Immediately call a POISON CENTER or doctor.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains *** Aluminum sulfate (Al2(SO4)3) hydrate (1:14); 2,3-Dihydroxybutanedioic acid; acetic acid

Reduced labeling (<= 125 ml)

Hazard pictograms *

Signal word *

Danger

Hazard statements *

H318 Causes serious eye damage.

Precautionary statements *

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

P310 Immediately call a POISON CENTER or doctor.

2.3. Other hazards

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 3: Composition/information on ingredients ***

Hazardous ingredients ***

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

CAS No. 16828-12-9
EINECS no. 605-512-3
Registration no. 01-2119531538-36-XXXX
Concentration >= 10 < 25 %
Classification (Regulation (EC) No. 1272/2008)
Eye Dam. 1 H318

acetic acid

CAS No. 64-19-7
EINECS no. 200-580-7
Registration no. 01-2119475328-30-XXXX
Concentration >= 3 < 5 %
Classification (Regulation (EC) No. 1272/2008)
Flam. Liq. 3 H226
Skin Corr. 1A H314

Concentration limits (Regulation (EC) No. 1272/2008)

Eye Irrit. 2	H319	>= 10 < 25 %
Skin Corr. 1A	H314	>= 90 %
Skin Corr. 1B	H314	>= 25 < 90 %
Skin Irrit. 2	H315	>= 10 < 25 %

ATE dermal 1’112 mg/kg
Additional remarks:
CLP Regulation (EC) No 1272/2008, Annex VI, Note B

2,3-Dihydroxybutanedioic acid

CAS No.	87-69-4				
EINECS no.	201-766-0				
Registration no.	01-2119537204-47-XXXX				
Concentration	>=	1	<	3	%

Classification (Regulation (EC) No. 1272/2008)

Eye Dam. 1 H318

Further ingredients

water

CAS No.	7732-18-5				
EINECS no.	231-791-2				
Concentration			>=	50	%

Advice: [4]

Calcium carbonate

CAS No.	471-34-1				
EINECS no.	207-439-9				
Registration no.	01-2119486795-18-XXXX				
Concentration	>=	1	<	10	%

Advice: [4]

Note

[4] Voluntary information

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated, soaked clothing immediately and dispose of safely. If you feel unwell, seek medical advice (show the label where possible).

After inhalation

Ensure supply of fresh air. In the event of symptoms take medical treatment.

After skin contact

After contact with skin, wash immediately with plenty of water. Summon a doctor immediately.

After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.). Summon a doctor immediately.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

5.2. Special hazards arising from the substance or mixture

Developpment of toxic gases

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Use self-contained breathing apparatus. Use personal protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Remove persons to safety. Keep away sources of ignition.

6.2. Environmental precautions

Do not allow to enter drains or waterways. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

Pick up with absorbent material. Send in suitable containers for recovery or disposal. Clean contaminated surfaces thoroughly with water.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes and clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage classes

Storage class according to TRGS 510	12	Non-combustible liquids
Storage category (Switzerland)	8	Caustic and corrosive substances

Further information on storage conditions

Keep container tightly closed in a cool, well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values

acetic acid

List	SUVA			
Type	MAK			
Value	25	mg/m³	10	ppm(V)
Short term exposure limit	50	mg/m³	20	ppm(V)

Pregnancy group: S; Remarks: SSc; OAW Auge; NIOSH OSHA

Derived No/Minimal Effect Levels (DNEL/DMEL)

acetic acid

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	25	mg/m³

Type of value	Derived No Effect Level (DNEL)
Reference group	Worker
Duration of exposure	Acute
Route of exposure	inhalative
Mode of action	Local effects

Concentration	25	mg/m³
Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	25	mg/m³

Predicted No Effect Concentration (PNEC)

acetic acid

Type	Soil	
Concentration	0.478	mg/kg
Type	Saltwater	
Concentration	0.3058	mg/l
Type	Freshwater	
Concentration	3.058	mg/l
Type	Marine sediment	
Concentration	1.136	mg/kg
Type	Sediment	
Concentration	11.36	mg/kg
Type	Sewage treatment plant (STP)	
Concentration	85	mg/l
Conditions	Intermittend	
Concentration	30.58	mg/l

8.2. Exposure controls

Respiratory protection

Provide good ventilation of working area (local exhaust ventilation if necessary).

Hand protection

necessary

Appropriate Material Gloves / resistant to chemicals

Eye protection

Tightly fitting safety glasses

Body protection

Protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state liquid, clear

Colour colourless to greenish yellow

Odour of acetic acid

Melting point

Remarks No data available

Boiling point or initial boiling point and boiling range

Value	>	100	°C

Flash point

Value		°C
Remarks	Not applicable	

pH value

Remarks	No data available

Vapour pressure

Value	appr.	23.0	hPa
Temperature		20 °C	
Source	Estimated value		

Density and/or relative density

Value	1.050	to	1.062	g/ml
Remarks	Relative Density according specification			

9.2. Other information

Solubility in water

Remarks	miscible

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

No decomposition if stored and applied as directed.

10.4. Conditions to avoid

No decomposition if stored and applied as directed.

10.5. Incompatible materials

No decomposition if stored and applied as directed.

10.6. Hazardous decomposition products

None under normal use.

SECTION 11: Toxicological information

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

Acute oral toxicity

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

Acute oral toxicity (Components)

2,3-Dihydroxybutanedioic acid

Species	rat		
LD50	>	2000	mg/kg
Method	OECD 423		

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

Species	rat		
LD50		6207	mg/kg

acetic acid

Species	rat		
LD50		3310	mg/kg

acetic acid

Species	rat		
LD50		3530	mg/kg

Acute dermal toxicity

ATE	>	10’000	mg/kg
Method	calculated value according to GHS (e.g see UN GHS)		
Remarks	Based on available data, the classification criteria are not met.		

Acute dermal toxicity (Components)

2,3-Dihydroxybutanedioic acid

Species	rat		
LD50	>	2000	mg/kg
Method	OECD 402		

acetic acid

Species	rabbit		
LD50		1112	mg/kg

Acute inhalational toxicity

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

Acute inhalative toxicity (Components)

acetic acid

Species	rat		
LC50		11.4	mg/l
Duration of exposure		4	h

acetic acid

Species	mouse		
LC50		5620	ppm(V)
Duration of exposure		1	h

acetic acid

Species	rat		
LC50	>	40	mg/l
Duration of exposure		4	h

Skin corrosion/irritation

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

Skin corrosion/irritation (Components)

2,3-Dihydroxybutanedioic acid

Species	rabbit
evaluation	non-irritant
Method	OECD 404

acetic acid

Species	rabbit
evaluation	strongly corrosive

Serious eye damage/irritation

evaluation	corrosive
Remarks	The classification criteria are met.

Serious eye damage/irritation (Components)

2,3-Dihydroxybutanedioic acid

evaluation	irritant - risk of serious damage to eyes
Method	OECD 437

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

evaluation	irritant - risk of serious damage to eyes

acetic acid

Species	rabbit
evaluation	irritant - risk of serious damage to eyes

Sensitization

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

Sensitization (Components)

2,3-Dihydroxybutanedioic acid

evaluation	non-sensitizing
Method	OECD 429

acetic acid

Remarks No data available.

Subacute, subchronic, chronic toxicity (Components)

2,3-Dihydroxybutanedioic acid

Chronic toxicity

Species	rat	
NOAEL	2460	mg/kg

acetic acid

Remarks No data available.

Mutagenicity

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

Mutagenicity (Components)

2,3-Dihydroxybutanedioic acid

evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 473

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

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

acetic acid

evaluation	No experimental indications on genotoxicity in vivo found.
Method	OECD 474

acetic acid

Species	mammal, species unspecified
evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 476

Reproductive toxicity

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

Reproduction toxicity (Components)

2,3-Dihydroxybutanedioic acid

evaluation	No negative effects
Method	OECD 414

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

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

Carcinogenicity

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

Carcinogenicity (Components)

2,3-Dihydroxybutanedioic acid

evaluation	No negative effects
Method	OECD 453

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

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

acetic acid

Remarks	negative on animals

Specific Target Organ Toxicity (STOT)

Single exposure

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

Repeated exposure

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

Specific Target Organ Toxicity (STOT) (Components)

acetic acid

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

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties with respect to humans

The product does not contain a substance that has endocrine disrupting properties with respect to humans.

Other information

By appropiate use of the product no health damage is known.

SECTION 12: Ecological information

12.1. Toxicity

Fish toxicity (Components)

2,3-Dihydroxybutanedioic acid

Species	zebra fish (Brachydanio rerio)			
LC50	>	100		mg/l
Duration of exposure		96	h	
Method	OECD 203			

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

Species	Gambusia affinis			
LC50		37		mg/l

acetic acid

Species	rainbow trout (Oncorhynchus mykiss)			
LC50	>	300.8		mg/l
Duration of exposure		96	h	
Method	OECD 203			

Daphnia toxicity (Components)

2,3-Dihydroxybutanedioic acid

Species	Daphnia magna			
EC50		93.3		mg/l
Duration of exposure		48	h	
Method	OECD 202			

acetic acid

Species	Daphnia magna			
EC50		47		mg/l
Duration of exposure		24	h	

acetic acid

Species	Daphnia magna			
EC50	>	300.82		mg/l

Duration of exposure	48	h	
Method	OECD 201		

Algae toxicity (Components)

2,3-Dihydroxybutanedioic acid

Species	Selenastrum capricornutum		
EC50	51.4		mg/l
Duration of exposure	72	h	
Method	OECD 201		

acetic acid

Species	Scenedesmus quadricauda		
IC5	4000		mg/l
Duration of exposure	16	h	

acetic acid

Species	Skeletonema costatum		
EC50	> 300.82		mg/l
Duration of exposure	72	h	

Bacteria toxicity (Components)

acetic acid

Species	Pseudomonas putida		
EC5	2850		mg/l
Duration of exposure	16	h	

acetic acid

Species	Photobacterium phosphoreum		
EC50	11		mg/l
Duration of exposure	15	min	

acetic acid

Species	Pseudomonas putida		
EC10	1000		mg/l
Duration of exposure	0.5	h	

12.2. Persistence and degradability

Biodegradability (Components)

2,3-Dihydroxybutanedioic acid

Value	> 80	%
evaluation	Readily biodegradable	

acetic acid

Value	99		%
Duration of test	30	d	
evaluation	Readily biodegradable		

acetic acid

Value	95		%
Duration of test	5	d	
Method	OECD 302B/ISO 9888/EEC 88/302,C		

Biochemical oxygen demand (BOD5) (Components)

acetic acid

Value	880		mg/g
Duration of test	5	d	

12.3. Bioaccumulative potential

Octanol/water partition coefficient (log Pow) (Components)

Aluminum sulfate (Al2(SO4)3) hydrate (1:14)

pOW	-2

acetic acid

log Pow	-0.17	
Temperature	25	°C

12.4. Mobility in soil

Mobility in soil (Components)

acetic acid

Mobile in soils

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

The product contains no PBT substances

The product contains no vPvB substances.

12.6 Endocrine disrupting properties

Endocrine disrupting properties with respect to the envrionment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Disposal in compliance with local and national regulations.

Disposal recommendations for packaging

Dispose of as unused product.

SECTION 14: Transport information ***

	Land transport ADR/RID ***	Marine transport IMDG/GGVSee	Air transport ICAO/IATA
14.1. UN number or ID number	The product does not constitute a hazardous substance in land transport.	The product does not constitute a hazardous substance in sea transport.	The product does not constitute a hazardous substance in air transport.
14.5. Environmental hazards	-		

SECTION 15: Regulatory information ***

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

Water Hazard Class (Germany)

Water Hazard Class (Germany)	WGK 3
Remarks	Derivation of WGK according to Annex 1 No. 5.2 AwSV

Other information *

The product does not contain substances according to Candidate List for inclusion in Annex XIV of Regulation (EC) No. 1907/2006 (REACH) with a content of >= 0.1% w/w.

15.2. Chemical safety assessment

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

SECTION 16: Other information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification (Regulation (EC) No. 1272/2008)

Eye Dam. 1	H318	Calculation method

Hazard statements listed in Chapter 2/3

H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.

CLP categories listed in Chapter 2/3

Eye Dam. 1	Serious eye damage, Category 1
Flam. Liq. 3	Flammable liquid, Category 3
Skin Corr. 1A	Skin corrosion, Category 1A

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.