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

1.1. Product identifier

Acid formicicum 25%

Item No. 20225100

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)

Skin Corr. 1B	H314
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 ***

H314	Causes severe skin burns and eye damage.

Precautionary statements ***

P264.1	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.
P501.3	Disposal in compliance with local and national regulations.

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

contains *** Formic acid

SECTION 3: Composition/information on ingredients ***

Hazardous ingredients *

Formic acid

CAS No.	64-18-6			
EINECS no.	200-579-1			
Registration no.	01-2119491174-37-XXXX			
Concentration	>=	25	< 50	%

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

Skin Corr. 1A	H314

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

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

CLP	Regulation (EC) No 1272/2008, Annex VI, Note B
DSD	Directive 67/548/EEC, Annex I, Note B

Further ingredients *

Water

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

Advice: [4]

Note

[4] Voluntary information

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove affected person from danger area, lay him down. Remove contaminated, soaked clothing immediately and dispose of safely. Adhere to personal protective measures when giving first aid

After inhalation

Ensure supply of fresh air. If the patient is likely to become unconscious, place and transport in stable sideways position. Summon a doctor immediately.

After skin contact

After contact with skin, wash immediately with plenty of water. Take medical treatment.

After eye contact

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

After ingestion

Rinse out mouth and give plenty of water to drink. Summon a doctor immediately.

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

Irritaion of respiratory organs, Irritation of mucosa, Acidosis

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide, Dry powder, Water spray jet, Extinguish greater fire with water spray or alcohol-resistant foam.

Non suitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Carbon monoxide (CO); Can build mixtures of gas and air which are capable of explosion.

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Wear full protective suit. Use self-contained breathing apparatus.

Other information

Collect contaminated fire-fighting water separately, must not be discharged into the drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep away unprotected persons. Respiratory protection

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Suppress gases/vapours/mists with water spray jet.

6.3. Methods and material for containment and cleaning up

Ensure adequate ventilation. When picked up, treat material as prescribed under Section 13 "Disposal".

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Provide good room ventilation even at ground level (vapours are heavier than air). Handle and open container with care. Avoid formation of aerosols.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Vapours can form an explosive mixture with air. Take action to prevent static discharges.

7.2. Conditions for safe storage, including any incompatibilities

Recommended storage temperature

Value	<	30	°C

Requirements for storage rooms and vessels

Provide acid-resistant floor. Do not use light metal drums. Suitable materials: Polyethylene/Polypropylene.

Hints on storage assembly

Do not store together with: Alkalies, Do not store with oxidizing agents.

Storage classes

Storage class according to TRGS 510	3	Flammable liquid
Storage category (Switzerland)	8	Caustic and corrosive substances

Further information on storage conditions

Keep container in a well-ventilated place. Keep container tightly closed. Protect from light.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values

Formic acid

List	SUVA			
Type	MAK			
Value	9,5	mg/m³	5	ppm(V)
Short term exposure limit	19	mg/m³	10	ppm(V)

Pregnancy group: S; Status: 2017; Remarks: SSc; Auge & Haut, OAWKT AN; NIOSH, OSHA

Derived No/Minimal Effect Levels (DNEL/DMEL)

Formic acid

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	19	mg/m³

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	9.5	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	9.5	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Local effects	
Concentration	3	mg/m³

Predicted No Effect Concentration (PNEC)

Formic acid

Type of value	PNEC	
Type	Freshwater	
Concentration	2	mg/l

Type of value	PNEC	
Type	Saltwater	
Concentration	0.2	mg/l

Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	7.2	mg/l

Type of value	PNEC	
Type	Soil	
Concentration	1.5	mg/kg

8.2. Exposure controls

General protective and hygiene measures

Keep away from food-stuffs, beverages and feed-stocks. Wash hands and face before breaks and after work. Avoid contact with skin and eyes. Hold eye wash fountain available. Do not inhale gases/vapours/aerosols.

Respiratory protection

Breathing apparatus in the event of aerosol or mist formation. Gas filter E.

Hand protection

Gloves (acid-resistant)

Gloves			
Appropriate Material	Polychloroprene		
Material thickness		0.5	mm
Breakthrough time	>=	8	h
Gloves			
Appropriate Material	Butyl rubber		
Material thickness		0.5	mm
Breakthrough time	>=	8	h
Gloves			
Appropriate Material	Fluoro carbon rubber - FKM		
Material thickness		0.4	mm
Breakthrough time	>=	8	h

Not suitable: gloves made of thick material
Not suitable: leather gloves

Eye protection

Tightly fitting safety glasses; Face shield

Body protection

Acid-resistant protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	Liquid
Colour	colourless
Odour	pungent

pH value

Remarks	not determined

Melting point

Remarks	not determined

Freezing point

Remarks	not determined

Initial boiling point and boiling range

Remarks	not determined

Flash point

Value	65	°C
Source	Literature value	

Upper/lower flammability or explosive limits

Remarks not determined

Vapour pressure

Value	43	hPa
Source	Literature value	

Density

Value	1.058	to	1.063	g/cm³

Solubility in water

Remarks Completely miscible

Partition coefficient: n-octanol/water

Remarks not determined

Ignition temperature

Remarks not determined

Auto-ignition temperature

Remarks not determined

Viscosity

Remarks not determined

Oxidising properties

evaluation None known

9.2. Other information

Other information

Forms esplosive mixture with air are possible.

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

To avoid thermal decomposition, do not overheat.

10.3. Possibility of hazardous reactions

Possible incompatibility with materials lister under section 10.5.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat. Sparks. Flames. Protect from direct sunlight.

10.5. Incompatible materials

Strong oxidising agents, Aluminium, Alkalies, Alkalis, hydrogen peroxide (H2O2). aluminium (Al), Reaction with Sulfuric acid.

10.6. Hazardous decomposition products

Carbon monoxide

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Skin corrosion/irritation

Remarks Corrosive action on the skin and mucous membrane.

Serious eye damage/irritation

Remarks strongly corrosive

Sensitization (Components)

Formic acid

Species guinea pig
evaluation non-sensitizing
Method OECD 406

Mutagenicity (Components)

Formic acid

evaluation No mutagenicity in the Ames-test.

Formic acid

evaluation No experimental information on genotoxicity in vitro available.

Reproduction toxicity (Components)

Formic acid

Remarks No indications of toxic effects were observed in reproduction studies in animals.

Carcinogenicity (Components)

Formic acid

Remarks negative on animals

Experience in practice

Ingestion of aqueous solution causes burns in: Mouth. Throat. Perforation of gullet and stomach.

SECTION 12: Ecological information

12.1. Toxicity

Fish toxicity (Components)

Formic acid

Species	zebra fish (Brachydanio rerio)		
LC50	130		mg/l
Duration of exposure	96	h	
Method	OECD 203		
Remarks	Test conducted with a similar formulation.		

Daphnia toxicity (Components)

Formic acid

Species	Daphnia magna		
EC50	365		mg/l
Duration of exposure	48	h	
Method	OECD 202		
Remarks	Test conducted with a similar formulation.		

Algae toxicity (Components)

Formic acid

Species	Selenastrum capricornutum		
EC50	1.240		mg/l
Duration of exposure	72	h	
Method	OECD 201		
Remarks	Test conducted with a similar formulation.		

Bacteria toxicity (Components)

Formic acid

Species	Pseudomonas putida		
EC50	46.7		mg/l
Duration of exposure	17	h	
Method	DIN 38412 Part 8		
Remarks	Test conducted with a similar formulation.		

12.2. Persistence and degradability

Biodegradability (Components)

Formic acid

Value	100		%
Duration of test	9	d	
evaluation	Readily biodegradable		

Chemical oxygen demand (COD) (Components)

Formic acid

Value	348	mg/g

Biochemical oxygen demand (BOD5) (Components)

Formic acid

Value	86	mg/g

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water

Remarks	not determined

12.4. Mobility in soil

General information

There is no data available on the product apart from the information given in this subsection.

12.5. Results of PBT and vPvB assessment

Evaluation of persistance and bioaccumulation potential (Components)

Formic acid

The Substance doesn't meets PBT/vPvB-criterions

12.6. Other adverse effects

General information / ecology

Harmful to aquatic organisms. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Product is slightly hazardous to water.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

EWC waste code	No not dispose with rubbish.
EWC waste code	Should not be released into the sanitary sewer system.

Disposal in compliance with local and national regulations.

Disposal recommendations for packaging

Disposal in compliance with local and national regulations.

SECTION 14: Transport information

	Land transport ADR/RID	Marine transport IMDG/GGVSee	Air transport ICAO/IATA
Tunnel restriction code	D/E		
14.1. UN number	1779	1779	1779
14.2. UN proper shipping name	FORMIC ACID, Solution	FORMIC ACID, Solution	FORMIC ACID, Solution
14.3. Transport hazard class(es)	8	8	8
Subsidiary risk	3	3	3
Label			
14.4. Packing group	II	II	II
Limited Quantity	1 l		
Transport category	2		

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 1
Remarks	Derivation of WGK according to Annex 1 No. 5.2 AwSV

15.2. Chemical safety assessment

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

SECTION 16: Other information

Hazard statements listed in Chapter 3

H314	Causes severe skin burns and eye damage.

CLP categories listed in Chapter 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.