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

1.1. Product identifier

NATURAL FORMIC ACID 80%

CAS No:	64-18-6
Index No:	607-001-00-0
EC No:	200-579-1
UFI:	E0S6-8QR6-U00P-Y257

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

Use of the substance/mixture

Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other

1.3. Details of the supplier of the safety data sheet

Company name:	Axxence Aromatic GmbH		
Street:	Tackenweide 28		
Place:	D-46446 Emmerich am Rhein		
Telephone:	+ 49 2822 68561 0	Telefax:	+ 49 2822 68561 39
E-mail:	info@axxence.com		
Contact person:	Safety Team	Telephone:	+ 49 2822 68561 0
E-mail:	safety-documentation@axxence.com		
Internet:	www.axxence.de		
Responsible Department:	Safety Management		

1.4. Emergency telephone number:

+49 2822 68561 99

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 3; H331
Acute Tox. 4; H302
Skin Corr. 1B; H314
Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

NATURAL FORMIC ACID min. 99%

Signal word: Danger

Pictograms:

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.

P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P312	Call a POISON CENTER/doctor if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P363	Wash contaminated clothing before reuse.
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.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container to organic waste.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Sum formula: C H2 O2

Molecular weight: 46,03 g/mol

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
64-18-6	NATURAL FORMIC ACID min. 99%			80 - 85 %
	200-579-1	607-001-00-0		
	Flam. Liq. 3, Met. Corr. 1, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1A, Eye Dam. 1; H226 H290 H331 H302 H314 H318			
7732-18-5	Water			15 - 20 %
	231-791-2			

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		
64-18-6	200-579-1	NATURAL FORMIC ACID min. 99%	80 - 85 %
	inhalation: LC50 = 7,85 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: LD50 = >2000 mg/kg; oral: LD50 = 730 mg/kg Skin Corr. 1A; H314: >= 90 - 100 Skin Corr. 1B; H314: >= 10 - < 90 Skin Irrit. 2; H315: >= 2 - < 10 Eye Irrit. 2; H319: >= 2 - < 10		
7732-18-5	231-791-2	Water	15 - 20 %
	oral: LD50 = >89800 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.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

After contact with skin

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

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

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink 1 glass of of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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.

5.2. Special hazards arising from the substance or mixture

Non-flammable. Vapours can form explosive mixtures with air.

5.3. Advice for firefighters

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

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For cleaning up

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.

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.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8
Disposal: see section 13

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.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

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, drink, smoke, sniff. 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, drink, smoke, sniff.

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.

Hints on joint storage

No special measures are necessary.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values

CAS No	Name of agent	ppm	mg/m³	fib/cm³	Category	Origin
64-18-6	Formic acid	5	9		TWA (8 h)	

DNEL/DMEL values

CAS No	Name of agent			
DNEL type		Exposure route	Effect	Value
64-18-6	NATURAL FORMIC ACID min. 99%			
Worker DNEL, long-term		inhalation	local	9,5 mg/m³
Consumer DNEL, long-term		dermal	systemic	3 mg/kg bw/day
Consumer DNEL, long-term		oral	systemic	3 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	9,5 mg/m³
Consumer DNEL, long-term		inhalation	systemic	6 mg/m³
Consumer DNEL, long-term		inhalation	local	6 mg/m³

PNEC values

CAS No	Name of agent	
Environmental compartment		Value
64-18-6	NATURAL FORMIC ACID min. 99%	
Freshwater		2 mg/l
Freshwater (intermittent releases)		1 mg/l
Marine water		0,2 mg/l
Freshwater sediment		13,4 mg/kg
Marine sediment		1,34 mg/kg
Micro-organisms in sewage treatment plants (STP)		7,2 mg/l
Soil		1,5 mg/kg

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.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Suitable gloves type: Butyl caoutchouc (butyl rubber) / FKM (fluoro rubber).
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.

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid	
Colour:		
Odour:	stinging	
Melting point/freezing point:		8 °C
Boiling point or initial boiling point and boiling range:		100 °C
Flammability:		520 °C
Lower explosion limits:		10 vol. %
Upper explosion limits:		45,5 vol. %
Flash point:		69 °C
Auto-ignition temperature:		520 °C
Decomposition temperature:		not determined

pH-Value (at 20 °C):	2,2
Viscosity / kinematic: (at 40 °C)	1,02 mm²/s
Water solubility: (at 20 °C)	1000 g/l
Solubility in other solvents	
not determined	
Partition coefficient n-octanol/water:	-2,1
Vapour pressure: (at 20 °C)	43 hPa
Vapour pressure: (at 50 °C)	170 hPa
Density (at 20 °C):	1,17 g/cm³
Relative vapour density: (at 20 °C)	1,59
Particle characteristics:	not applicable

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

The product is not: Explosive. not explosive according to EU A.14

Oxidizing properties

The product is not: oxidising.

Other safety characteristics

Evaporation rate:	not determined
Solvent content:	0%
Solid content:	0%
Viscosity / dynamic: (at 20 °C)	1,8 mPa·s

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

none

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

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

Acute toxicity

Toxic if inhaled.

Harmful if swallowed.

ATEmix calculated

ATE (oral) 912,5 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) 9,810 mg/l; ATE (inhalation dust/mist) 0,6250 mg/l

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
64-18-6	NATURAL FORMIC ACID min. 99%					
	oral	LD50 mg/kg	730	Rat	REACH registration	OECD 401
	dermal	LD50 mg/kg	>2000	Rabbit	REACH registration	OECD 402
	inhalation (4 h) vapour	LC50	7,85 mg/l	Rat	REACH registration	OECD 403
	inhalation dust/mist	ATE	0,5 mg/l			
7732-18-5	Water					
	oral	LD50 mg/kg	>89800	Rat		

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.
Serious eye damage/eye irritation: Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

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.

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

Other information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
64-18-6	NATURAL FORMIC ACID min. 99%						
	Acute fish toxicity	LC50	130 mg/l	96 h	Danio rerio (zebrafish)	REACH registration	OECD 203
	Acute algae toxicity	ErC50 mg/l	1240	72 h	Pseudokirchneriella subcapitata	REACH registration	OECD 201
	Acute crustacea toxicity	EC50	365 mg/l	48 h	Daphnia magna (Big water flea)	REACH registration	OECD 202
	Crustacea toxicity	NOEC mg/l	>100	21 d	Daphnia magna (Big water flea)	REACH registration	OECD 211
	Acute bacteria toxicity	EC50 mg/l ( )	>500		Activated sludge	REACH registration	OECD 209

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-18-6	NATURAL FORMIC ACID min. 99%			
	OECD 301	98%	14	REACH registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301	26%	10	REACH registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301	12%	7	REACH registration
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64-18-6	NATURAL FORMIC ACID min. 99%	-2,1

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.
The product has not been tested.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.
No information available.

12.7. Other adverse effects

No information available.

Further information

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

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.

List of Wastes Code - residues/unused products

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - used product

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3412
14.2. UN proper shipping name:	FORMIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Classification code:	C3
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	80
Tunnel restriction code:	E

Other applicable information (land transport)

E2

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3412
14.2. UN proper shipping name:	FORMIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Classification code:	C3
Limited quantity:	1 L
Excepted quantity:	E2

Other applicable information (inland waterways transport)

E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3412
14.2. UN proper shipping name:	FORMIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-A, S-B
Segregation group:	1 - acids

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3412
14.2. UN proper shipping name:	FORMIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8

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: 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, Entry 40

Directive 2010/75/EU on industrial emissions:	100 % (1170 g/l)
Directive 2004/42/EC on VOC in paints and varnishes:	100 % (1170 g/l)
Information according to Directive 2012/18/EU (SEVESO III):	H2 ACUTE TOXIC

Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

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):	3 - highly hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1.

Abbreviations and acronyms

Met. Corr: Substance or mixture corrosive to metals
Flam. Liq: Flammable liquid
Acute Tox: Acute toxicity
Skin Corr: Skin corrosion
Eye Dam: Eye damage
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%
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
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern
For abbreviations and acronyms, see table at http://abbrev.esdscom.eu
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
EC/EEC: European Community/European Economic Community
EU: European Union
M-factor: Multiplying factor
IATA: International Air Transport Association
DGR: Dangerous Goods Regulations
ICAO: International Civil Aviation Organization
TI: Technical Instructions
VOC: volatile organic compound

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 3; H331	Calculation method
Acute Tox. 4; H302	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method

Relevant H and EUH statements (number and full text)

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.

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.

Identified uses

No	Short title	LCS	SU	PC	PROC	ERC	AC	TF	Specification
1		-	4	28	-	-	-	-	Flavour

LCS: Life cycle stages
SU: Sectors of use
PC: Product categories
PROC: Process categories
ERC: Environmental release categories
AC: Article categories
TF: Technical functions

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)