SAFETY DATA SHEET

FabALACTICA™ Immobilized

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

1.1. Product identifier

Trade name

FabALACTICA™ Immobilized

Product no.

A0-AG6-010, A0-AG6-050, A0-AG6-100, A0-AG6-1000, A2-AFK-005, A2-AFK-025, A2-AFK-100, A2-AFK-1000

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

Relevant identified uses of the substance or mixture

Antibody fragmentation reagent, Laboratory use
Restricted to professional and industrial use.

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

Company and address

Genovis AB
Box 4
244 21 Kävlinge
Sweden
+46 (0)46 10 12 30
www.genovis.com

E-mail

info@genovis.com

Revision

13/04/2026

SDS Version

1.0

1.4. Emergency telephone number

In urgent situations: Call 112 and request the poison information centre. (24h service)
Giftnotrufzentrale Berlin, Emergency telephone: +49 30 19240 (day and night)
See also section 4 for first aid measures.

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP).

2.1. Classification of the substance or mixture

Flam. Liq. 3; H226, Flammable liquid and vapour.

2.2. Label elements

Hazard pictogram(s)

Signal word

Warning

Hazard statement(s)

Flammable liquid and vapour. (H226)

Precautionary statement(s)

General

Not applicable.

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)

Response

In case of fire: Use water mist/carbon dioxide/alcohol-resistant foam to extinguish. (P370+P378)

Storage

Store in a well-ventilated place. Keep cool. (P403+P235)

Disposal

Dispose of contents/container in accordance with local regulation.
(P501)

Hazardous substances

Contains no substances that need to be listed on the label.

Additional labelling

2.3. Other hazards

Additional warnings

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.
This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
ethanol;ethyl alcohol	CAS No.: 64-17-5 EC No.: 200-578-6 REACH: Index No.: 603-002-00-5	1-20%	Flam. Liq. 2, H225	
FabALACTICA™	CAS No.: EC No.: REACH: Index No.:	1-10%		

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

Ingestion

If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink.
In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

Burns

Rinse with water until pain stops then continue to rinse for 30 minutes.

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

None known.

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

Treat symptomatically.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Flammable liquid and vapour.
In use may form flammable/explosive vapour-air mixture.
Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.
If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Carbon oxides (CO / CO2)

5.3. Advice for firefighters

To avoid contact with the substance, wear self-contained breathing apparatus and protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Storages not yet ignited must be cooled by water mist. Remove flammable materials if conditions allow it. Ensure sufficient ventilation.
Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ground and bond container and receiving equipment.
Use explosion-proof electrical/lighting/ventilating equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid contact during pregnancy and while nursing.
Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.
Take action to prevent static discharges.
Must be stored in a cool and well-ventilated area, away from possible sources of ignition.
Joint storage is permitted for products in storage classes: 2B, 3, 6.1A, 6.1C, 8A, 8B, 10, 12, 13
Restrictions apply to joint storage of products in storage classes: 5.1B, 6.1D, 11
Joint storage is NOT allowed for products in all other storage classes.

Recommended storage material

Keep only in original packaging.

Storage class

Storage class 3 (Flammable liquids).
TRGS 510 - Storage of hazardous substances in non-stationary containers.

Storage conditions

Dry, cool and well ventilated

Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol;ethyl alcohol
Long term exposure limit (8 hours) (ppm): 200
Long term exposure limit (8 hours) (mg/m^3): 380
Short term exposure limit (15 minutes) (ppm): 800
Short term exposure limit (15 minutes) (mg/m^3): 1520
Category for short-term values: II
Annotations:
DFG = Senate Commission for the examination of Harmful working materials of the DFG (MAK Commission)
Y = No risk of fetal damage is to be feared if the occupational exposure limit (OEL) value and the biological limit value (BLV) are adhered to.

Technical requirements for hazardous substances, workplace exposure limits, TRGS 900 (Jan. 2006)

DNEL

ethanol;ethyl alcohol

Duration:	Route of exposure:	DNEL:
Long term – Systemic effects - Workers	Dermal	343 mg/kg bw/day
Long term – Systemic effects - Workers	Inhalation	380 mg/m^3
Short term – Local effects - Workers	Inhalation	1900 mg/m^3

PNEC

ethanol;ethyl alcohol

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		960 µg/L
Freshwater sediment		3.6 mg/kg
Intermittent release (freshwater)		2.75 mg/L
Marine water		790 µg/L
Marine water sediment		2.9 mg/kg
Predators		380-720 mg/kg
Sewage treatment plant		580 mg/L
Soil		630 µg/kg

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations

Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures

The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.

Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Use only CE marked protective equipment.

Respiratory Equipment

Type	Class	Colour	Standards
Respiratory protection is not needed in the event of adequate ventilation.			

Skin protection

No specific requirements.

Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards
Gloves	-	-	EN374

Eye protection

Type	Standards
Safety glasses	EN166

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Liquid

Colour
No data available.

Odour / Odour threshold
No data available.

pH
No data available

Density (g/cm^3)
No data available

Relative density
No data available

Kinematic viscosity
No data available

Particle characteristics
No data available

Phase changes

Melting point/Freezing point (°C)
-9

Softening point/range (°C)
Does not apply to liquids.

Boiling point (°C)
No data available

Vapour pressure
No data available

Relative vapour density
No data available

Decomposition temperature (°C)
No data available

Data on fire and explosion hazards

Flash point (°C)
36

Flammability (°C)
The material is ignitable.

Auto-ignition temperature (°C)
No data available

Lower and upper explosion limit (% v/v)
No data available

Solubility

Solubility in water
Soluble

n-octanol/water coefficient (LogKow)
No data available

Solubility in fat (g/L)
No data available

9.2. Other information

Evaporation rate (n-butylacetate = 100)
No data available

Other physical and chemical parameters
No data available.

Oxidizing properties
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available.

10.2. Chemical stability
The product is stable under the conditions, noted in section 7 “Handling and storage”.

10.3. Possibility of hazardous reactions
None known.

10.4. Conditions to avoid
Mechanical influences (e.g. Shock, pressure, impact, friction). Fire, sparks or other ignition sources.

10.5. Incompatible materials
Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/substance	ethanol;ethyl alcohol
Species:	Rabbit
Route of exposure:	Dermal
Test:	LD50 (24h)
Result:	>20000 mg/kg

Product/substance	ethanol;ethyl alcohol
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	124.7 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Rat
Route of exposure:	Oral
Test:	LD50 (24h)
Result:	6200 mg/kg

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

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

Serious eye damage/irritation
Based on available data, the classification criteria are not met.

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

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

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.

Symptoms related to the physical, chemical and toxicological characteristics

None known.

11.2. Information on other hazards

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

None known.

SECTION 12: Ecological information

12.1. Toxicity

Product/substance	ethanol;ethyl alcohol
Species:	Fish
Duration:	96 hours
Test:	LC50
Result:	13480 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Fish
Duration:	96 hours
Test:	LC50
Result:	13480 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Daphnia
Duration:	48 hours
Test:	LC50
Result:	5400 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Daphnia
Duration:	48 hours
Test:	EC50
Result:	9268 mg/L

Product/substance	ethanol;ethyl alcohol
Duration:	48 hours
Test:	LC50
Result:	8140 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Daphnia
Duration:	24 hours
Test:	EC50
Result:	10800 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Algae
Duration:	72 hours
Test:	IC50
Result:	>10.9 mg/L

Product/substance	ethanol;ethyl alcohol
Duration:	96 hours
Test:	LC50
Result:	11000 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Fish
Duration:	24 hours
Test:	LC50
Result:	11200 mg/L

Product/substance	ethanol;ethyl alcohol
Duration:	16 hours
Test:	IC50
Result:	6500 mg/L

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

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

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

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.
HP 3 - Flammable
Dispose of contents/container to an approved waste disposal plant.
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code

Not applicable.

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR/A DN/RID	UN1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	Limited quantities: 5 L Tunnel restriction code: (D/E) See below for additional information.

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
IMDG	UN1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	Limited quantities: 5 L EmS: F-E S-D See below for additional information.
IATA	UN1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

This product is within scope of the regulations of transport of dangerous goods.
ADR/ADN/RID / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.
IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.
IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Restrictions for application

Restricted to professional users.
Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education

No specific requirements.

SEVESO - Categories / dangerous substances

P5c - FLAMMABLE LIQUIDS, Qualifying quantity (lower-tier): 5.000 tonnes / (upper-tier): 50.000 tonnes

REACH, Annex XVII

ethanol;ethyl alcohol is subject to REACH restrictions (entry 40).

WGK classification

WGK class: WGK 3

Additional information

Not applicable.

Sources

Law on the protection of mothers at work, in training and in studies (Mutterschutzgesetz - MuSchG) 23.05.2017 (BGBl. I S. 1228).
Twelfth ordinance for the implementation of the Federal Immission Control Act (Major Accidents Ordinance - 12th BImSchV).
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.
Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H225, Highly flammable liquid and vapour.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EC = Effective concentration
ED = Effective dose
EINECS = European Inventory of Existing Commercial chemical Substances
EL = Effective Loading
ErC = Concentration associated with x% growth rate response
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
GWP = Global warming potential
HP = Hazardous Property code
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IC = X maximum inhibitory concentration
IMDG = International Maritime Dangerous Goods
LC = Lethal concentration
LCLo = Value is the lowest concentration of a material in air reported to have caused the death of animals or humans
LD = Lethal dose
LOAEC = Lowest Observed Adverse Effect Concentration
LOAEL = Lowest Observed Adverse Effect Level
LOEC = Lowest Observed Effect Concentration
LogKow = logarithm of the n-octanol/water coefficient
LL = Lethal Loading
M = For multiplication factor
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOELR = No Observable Effect Loading Rate
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard to physical hazards has been based on experimental data.

The safety data sheet is validated by

Stephan Björk

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
Country-language: DE-en

SAFETY DATA SHEET

CaptureSelect™ Fc

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

1.1. Product identifier

▼Trade name

CaptureSelect™ Fc

Product no.

CS-FC1-005, CS-FC1-100, CS-FC1-1000, A2-FR2-005, A2-FR2-010, A2-FR2-025, A2-FR2-100, A2-FR2-1000, A2-AFK-005, A2-AFK-025, A2-AFK-100, A2-AFK-1000, A2-FZ2-005, A2-FZ2-025, L1-T01-200, L1-T02-200, CS-FC3-005, T1-TGF-010, T1-TGA-010, T1-AZ1-001, T1-AZ2-001

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

Relevant identified uses of the substance or mixture

For Research use only, Antibody purification
Restricted to professional and industrial use.

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

Company and address

Genovis AB
Box 4
244 21 Kävlinge
Sweden
+46 (0)46 10 12 30
www.genovis.com

E-mail

info@genovis.com

Revision

21/04/2026

SDS Version

2.0

Date of previous version

21/04/2026 (1.0)

1.4. Emergency telephone number

In urgent situations: Call 112 and request the poison information centre. (24h service)
Giftnotrufzentrale Berlin, Emergency telephone: +49 30 19240 (day and night)
See also section 4 for first aid measures.

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP).

2.1. Classification of the substance or mixture

Flam. Liq. 3; H226, Flammable liquid and vapour.

2.2. Label elements

Hazard pictogram(s)

Signal word
Warning

Hazard statement(s)
Flammable liquid and vapour. (H226)

Precautionary statement(s)

General
Not applicable.

Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)
Keep container tightly closed. (P233)

Response
In case of fire: Use water mist/carbon dioxide/alcohol-resistant foam to extinguish. (P370+P378)

Storage
Store in a well-ventilated place. Keep cool. (P403+P235)

Disposal
Dispose of contents/container in accordance with local regulation.
(P501)

Hazardous substances
Contains no substances that need to be listed on the label.

Additional labelling

2.3. Other hazards

Additional warnings
This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.
This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
ethanol;ethyl alcohol	CAS No.: 64-17-5 EC No.: 200-578-6 REACH: Index No.: 603-002-00-5	10-20%	Flam. Liq. 2, H225	
CaptureSelect® Affinity Ligand	CAS No.: EC No.: REACH: Index No.:	1-10%		

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information
-

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet.

Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

Ingestion

If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink.
In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

Burns

Rinse with water until pain stops then continue to rinse for 30 minutes.

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

None known.

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

Treat symptomatically.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Flammable liquid and vapour.
In use may form flammable/explosive vapour-air mixture.
Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.
If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Carbon oxides (CO / CO2)

5.3. Advice for firefighters

To avoid contact with the substance, wear self-contained breathing apparatus and protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Storages not yet ignited must be cooled by water mist. Remove flammable materials if conditions allow it. Ensure sufficient ventilation.
Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ground and bond container and receiving equipment.
Use explosion-proof electrical/lighting/ventilating equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid contact during pregnancy and while nursing.
Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.
Take action to prevent static discharges.
Must be stored in a cool and well-ventilated area, away from possible sources of ignition.
Joint storage is permitted for products in storage classes: 2B, 3, 6.1A, 6.1C, 8A, 8B, 10, 12, 13
Restrictions apply to joint storage of products in storage classes: 5.1B, 6.1D, 11
Joint storage is NOT allowed for products in all other storage classes.

Recommended storage material

Keep only in original packaging.

Storage class

Storage class 3 (Flammable liquids).
TRGS 510 - Storage of hazardous substances in non-stationary containers.

Storage conditions

Dry, cool and well ventilated

Incompatible materials

Strong oxidizing agents

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol;ethyl alcohol
Long term exposure limit (8 hours) (ppm): 200
Long term exposure limit (8 hours) (mg/m^3): 380
Short term exposure limit (15 minutes) (ppm): 800
Short term exposure limit (15 minutes) (mg/m^3): 1520
Category for short-term values: II
Annotations:
DFG = Senate Commission for the examination of Harmful working materials of the DFG (MAK Commission)
Y = No risk of fetal damage is to be feared if the occupational exposure limit (OEL) value and the biological limit value (BLV) are adhered to.

Technical requirements for hazardous substances, workplace exposure limits, TRGS 900 (Jan. 2006)

DNEL

ethanol;ethyl alcohol

Duration:	Route of exposure:	DNEL:

Long term – Systemic effects - Workers	Dermal	343 mg/kg bw/day
Long term – Systemic effects - Workers	Inhalation	380 mg/m³
Short term – Local effects - Workers	Inhalation	1900 mg/m³

PNEC

ethanol;ethyl alcohol

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		960 µg/L
Freshwater sediment		3.6 mg/kg
Intermittent release (freshwater)		2.75 mg/L
Marine water		790 µg/L
Marine water sediment		2.9 mg/kg
Predators		380-720 mg/kg
Sewage treatment plant		580 mg/L
Soil		630 µg/kg

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations

Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures

The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.

Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Use only CE marked protective equipment.

Respiratory Equipment

Type	Class	Colour	Standards
AX		Brown	EN14387

Skin protection

Recommended	Type/Category	Standards
Dedicated work clothing should be worn.	-	-

Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards
Gloves	-	-	EN374

Eye protection

Type	Standards
Safety glasses	EN166

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Liquid

Colour
Colourless

Odour / Odour threshold
Alcohol odor

pH
No data available

Density (g/cm^3)
No data available

Relative density
No data available

Kinematic viscosity
No data available

Particle characteristics
No data available

Phase changes

Melting point/Freezing point (°C)
No data available

Softening point/range (°C)
Does not apply to liquids.

Boiling point (°C)
80

Vapour pressure
No data available

Relative vapour density
No data available

Decomposition temperature (°C)
No data available

Data on fire and explosion hazards

Flash point (°C)
23

Flammability (°C)
The material is ignitable.

Auto-ignition temperature (°C)
No data available

Lower and upper explosion limit (% v/v)
No data available

Solubility

Solubility in water
No data available

n-octanol/water coefficient (LogKow)
No data available

Solubility in fat (g/L)
No data available

9.2. Other information

Evaporation rate (n-butylacetate = 100)
No data available

Other physical and chemical parameters
No data available.

Oxidizing properties
No data available.

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available.

10.2. Chemical stability
The product is stable under the conditions, noted in section 7 “Handling and storage”.

10.3. Possibility of hazardous reactions
None known.

10.4. Conditions to avoid
Mechanical influences (e.g. Shock, pressure, impact, friction). Fire, sparks or other ignition sources.

10.5. Incompatible materials
Strong oxidizing agents

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity

Product/substance	ethanol;ethyl alcohol
Species:	Rabbit
Route of exposure:	Dermal
Test:	LD50 (24h)
Result:	>20000 mg/kg

Product/substance	ethanol;ethyl alcohol
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	124.7 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Rat
Route of exposure:	Oral
Test:	LD50 (24h)
Result:	6200 mg/kg

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

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

Serious eye damage/irritation

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

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

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

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.

Symptoms related to the physical, chemical and toxicological characteristics
None known.

11.2. Information on other hazards

Endocrine disrupting properties
This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information
None known.

SECTION 12: Ecological information

12.1. Toxicity

Product/substance	ethanol;ethyl alcohol
Species:	Fish
Duration:	96 hours
Test:	LC50
Result:	13480 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Fish
Duration:	96 hours
Test:	LC50
Result:	13480 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Daphnia
Duration:	48 hours
Test:	LC50
Result:	5400 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Daphnia
Duration:	48 hours
Test:	EC50
Result:	9268 mg/L

Product/substance	ethanol;ethyl alcohol
Duration:	48 hours
Test:	LC50

Result:	8140 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Daphnia
Duration:	24 hours
Test:	EC50
Result:	10800 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Algae
Duration:	72 hours
Test:	IC50
Result:	>10.9 mg/L

Product/substance	ethanol;ethyl alcohol
Duration:	96 hours
Test:	LC50
Result:	11000 mg/L

Product/substance	ethanol;ethyl alcohol
Species:	Fish
Duration:	24 hours
Test:	LC50
Result:	11200 mg/L

Product/substance	ethanol;ethyl alcohol
Duration:	16 hours
Test:	IC50
Result:	6500 mg/L

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

12.2. Persistence and degradability
Based on available data, the classification criteria are not met.

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

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties
This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. Other adverse effects
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product is covered by the regulations on hazardous waste.
HP 3 - Flammable
Dispose of contents/container to an approved waste disposal plant.
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code
Not applicable.

Contaminated packing
Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR/ADN/RID	UN1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	Limited quantities: 5 L Tunnel restriction code: (D/E) See below for additional information.
IMDG	UN1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	Limited quantities: 5 L EmS: F-E S-D See below for additional information.
IATA	UN1170	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	Transport hazard class: 3 Label: 3 Classification code: F1 	III	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

This product is within scope of the regulations of transport of dangerous goods.
ADR/ADN/RID / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.
IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.
IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Restrictions for application

Restricted to professional users.
Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education

No specific requirements.

SEVESO - Categories / dangerous substances

P5c - FLAMMABLE LIQUIDS, Qualifying quantity (lower-tier): 5.000 tonnes / (upper-tier): 50.000 tonnes

REACH, Annex XVII

ethanol;ethyl alcohol is subject to REACH restrictions (entry 40).

WGK classification

WGK class: WGK 3

Additional information

Not applicable.

Sources

Law on the protection of mothers at work, in training and in studies (Mutterschutzgesetz - MuSchG) 23.05.2017 (BGBl. I S. 1228).
Twelfth ordinance for the implementation of the Federal Immission Control Act (Major Accidents Ordinance - 12th BImSchV).
Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.
Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

No

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H225, Highly flammable liquid and vapour.

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EC = Effective concentration
ED = Effective dose
EINECS = European Inventory of Existing Commercial chemical Substances
EL = Effective Loading
ErC = Concentration associated with x% growth rate response
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
GWP = Global warming potential
HP = Hazardous Property code
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IC = X maximum inhibitory concentration
IMDG = International Maritime Dangerous Goods
LC = Lethal concentration
LCLo = Value is the lowest concentration of a material in air reported to have caused the death of animals or humans
LD = Lethal dose
LOAEC = Lowest Observed Adverse Effect Concentration
LOAEL = Lowest Observed Adverse Effect Level
LOEC = Lowest Observed Effect Concentration
LogKow = logarithm of the n-octanol/water coefficient
LL = Lethal Loading

M = For multiplication factor
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOELR = No Observable Effect Loading Rate
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard to physical hazards has been based on experimental data.

The safety data sheet is validated by

Stephan Björk

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
Country-language: DE-en