

14.05.2025

Kit components

Product code	Description
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30-41-10	Silver Staining Kit
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Components:

30-41-SS1	30% ethanol, 10% acetic acid - 100ml
30-41-SS2	30% ethanol - 100ml
30-41-SS3	20% Silver Nitrate - 10ml
30-41-SS4	2.5% sodium carbonate, 0.02% formamide - 100ml
30-41-SS5	1% acetic acid - 100ml

Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

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

- **1.1 Product identifier**
- **Trade name:** 30% ethanol, 10% acetic acid - 100ml
- **Product Code:** 30-41-SS1
- **Registration number** Mixture
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **Uses advised against** Any use not specified above.
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to GB-CLP**
Flam. Liq. 3 H226 Flammable liquid and vapour.
Met. Corr.1 H290 May be corrosive to metals.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
- **2.2 Label elements**
- **Labelling according to GB-CLP** The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS02 GHS05

- **Signal word** Warning
- **Hazard statements**
H226 Flammable liquid and vapour.
H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

(Contd. on page 2)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 1)

· Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
- P280 Wear protective gloves / eye protection / face protection.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P501 Dispose of contents/container in accordance with local regulations.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

- **Description:** Mixture of substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5 Reg.nr.: 01-2119457610-43-XXXX	Ethanol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319 Specific concentration limit: Eye Irrit. 2; H319: C ≥ 50 %	25 – < 50%
CAS: 64-19-7 EINECS: 200-580-7 Index number: 607-002-00-6 Reg.nr.: 01-2119475328-30-XXXX	Acetic acid ⚠ Flam. Liq. 3, H226; ⚠ Skin Corr. 1A, H314 Note: B Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90 % Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 % Met. Corr.1; H290: C ≥ 10 %	10%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **Information for doctor:** Treat symptomatically and supportively.

(Contd. on page 3)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 2)

- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Flammable. Vapors may travel to source of ignition and flash back.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
- **Additional information**
Absorb gas/vapours with water spray.
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course in the undiluted form.
Prevent seepage into sewage system, workpits and cellars.
- **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.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

(Contd. on page 4)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 3)

- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Storage class:** 3
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**

CAS: 64-17-5 Ethanol

WEL Long-term value: 1920 mg/m³, 1000 ppm

CAS: 64-19-7 Acetic acid

WEL Short-term value: 50 mg/m³, 20 ppm
Long-term value: 25 mg/m³, 10 ppm

· **DNELs**

CAS: 64-17-5 Ethanol

Oral	Long-term systemic effects	87 mg/kg bw/day (general population)
Dermal	Long-term systemic effects	206 mg/kg bw/day (general population) 343 mg/kg bw/day (worker)
Inhalative	Long-term systemic effects	114 mg/m ³ (general population) 380 mg/m ³ (worker)
	Short-term local effects	950 mg/m ³ (general population) 1,900 mg/m ³ (worker)

CAS: 64-19-7 Acetic acid

Inhalative	Long-term local effects	25 mg/m ³ (general population) 25 mg/m ³ (worker)
	Short-term local effects	25 mg/m ³ (general population) 25 mg/m ³ (worker)

· **PNECs**

CAS: 64-17-5 Ethanol

Freshwater	960 µg/L
Freshwater - Intermittent releases	2.75 mg/L
Marine water	790 µg/L
Sewage Treatment Plant	580 mg/L
Sediment (freshwater)	3.6 mg/kg
Sediment (marine water)	2.9 mg/kg

(Contd. on page 5)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 4)

Soil	630 µg/kg
Secondary poisoning	380 – 720 mg/kg food
CAS: 64-19-7 Acetic acid	
Freshwater	3.058 mg/L
Freshwater - Intermittent releases	30.58 mg/L
Marine water	305.8 µg/L
Sewage Treatment Plant	85 mg/L
Sediment (freshwater)	11.36 mg/kg
Sediment (marine water)	1.136 mg/kg
Soil	470 µg/kg

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Take note of assigned Workplace Exposure Limits.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Ensure that eyewash stations and safety showers are close to the workstation location.

· **Respiratory protection:** Not necessary if room is well-ventilated.

· **Hand protection**



Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

· **Body protection:**



Flame retardant antistatic protective clothing.

Body protection must be chosen depending on product properties, activity and possible exposure.

(Contd. on page 6)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 5)

- **Environmental exposure controls** Do not let product enter drains. Risk of explosion.
- **Risk management measures** The operators shall be instructed adequately.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Liquid
· Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	78 °C (CAS: 64-17-5 Ethanol)
· Flammability	Flammable.
· Lower and upper explosion limit	
· Lower:	2.5 Vol % (CAS: 64-17-5 Ethanol)
· Upper:	17 Vol % (CAS: 64-19-7 Acetic acid)
· Flash point:	29 °C
· Auto-ignition temperature:	> 350 °C (CAS: 64-17-5 Ethanol)
· Decomposition temperature:	Not determined.
· pH at 20 °C	1 – 2
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	59 hPa (CAS: 64-17-5 Ethanol)
· Vapour pressure at 50 °C:	280 hPa
· Density and/or relative density	
· Density at 20 °C:	0.942 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· 9.2 Other information

· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Solvent content:	
· VOC (EC)	40.00 %
· Change in condition	
· Evaporation rate	Not determined.

· Information with regard to physical hazard classes

· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable

(Contd. on page 7)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 6)

· Gases under pressure	Not applicable
· Flammable liquids	Flammable liquid and vapour.
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable
· Oxidising liquids	Not applicable
· Oxidising solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	May be corrosive to metals.
· Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
At elevated temperatures, explosive vapour/air mixtures may be formed.
- **10.3 Possibility of hazardous reactions** Reacts with oxidising agents.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:** Strong oxidising agents.
- **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

CAS: 64-17-5 Ethanol

Oral	LD50	> 10,000 mg/kg (rat)
Dermal	LD50	> 10,000 mg/kg (rabbit)
Inhalative	LC50/4 h	> 100 mg/l (rat)

CAS: 64-19-7 Acetic acid

Inhalative	LC50/4 h	40 mg/l (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or 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.

(Contd. on page 8)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 7)

- **Subacute to chronic toxicity:**

Prolonged or repeated skin contact may irritate and cause dermatitis.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the liver. This may result in impaired functions.

- **Additional toxicological information:**

Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

None of the ingredients are listed.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

CAS: 64-17-5 Ethanol

EC50 (96 h) 454 mg/l (Bacteria)

CAS: 64-19-7 Acetic acid

EC50 (96 h) > 300.82 mg/l (Daphnia)

> 300.82 mg/l (Fish)

EC50 (72 h) 300.82 mg/l (Algae)

- **12.2 Persistence and degradability** Readily biodegradable

- **12.3 Bioaccumulative potential** Contains components with the potential to bioaccumulate.

- **12.4 Mobility in soil** No further relevant information available.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

- **12.7 Other adverse effects**

- **Additional ecological information:**

- **General notes:**

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

(Contd. on page 9)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 8)

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packaging:**

· **Recommendation:**

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

· **Recommended cleansing agents:** Large quantities of water

SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR/RID/ADN, IMDG, IATA**

UN2924

· **14.2 UN proper shipping name**

· **ADR/RID/ADN**

UN2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), ACETIC ACID, GLACIAL)

· **IMDG**

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), ACETIC ACID, GLACIAL)

· **IATA**

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, ACETIC ACID, GLACIAL)

· **14.3 Transport hazard class(es)**

· **ADR/RID/ADN**



· **Class**

3 (FC) Flammable liquids.

· **Label**

3+8

· **IMDG**



· **Class**

3 Flammable liquids.

· **Label**

3/8

· **IATA**



· **Class**

3 Flammable liquids.

· **Label**

3 (8)

(Contd. on page 10)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 9)

· 14.4 Packing group	
· ADR/RID/ADN, IMDG, IATA	III
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Hazard identification number (Kemler code):	38
· Hazchem Code:	•3W
· EMS Number:	F-E,S-C
· Segregation groups	(SGG1) Acids
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR/RID/ADN	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), ACETIC ACID, GLACIAL), 3 (8), III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

- **Regulated explosives precursors**

None of the ingredients are listed.

- **Regulated poisons**

None of the ingredients are listed.

- **Reportable explosives precursors**

None of the ingredients are listed.

- **Reportable poisons**

None of the ingredients are listed.

- **Control Of Major Accident Hazards Regulations 2015 (COMAH)**

- **Named dangerous substances - ANNEX I** None of the ingredients are listed.

(Contd. on page 11)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol, 10% acetic acid - 100ml

(Contd. of page 10)

- **COMAH category** P5c
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **National regulations:**
- **Information about limitation of use:**

Class	Share in %
II	10.0
NK	30.0

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

- **Relevant phrases**

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

- **Training hints**

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

- **Department issuing SDS:** Product safety department.

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Met. Corr. 1: Corrosive to metals – Category 1

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Safety data sheet
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Revision: 14.05.2025

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

- **1.1 Product identifier**
- **Trade name:** 30% ethanol - 100ml
- **Product Code:** 30-41-SS2
- **Registration number** Mixture
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **Uses advised against** Any use not specified above.
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to GB-CLP**
Flam. Liq. 3 H226 Flammable liquid and vapour.
- **2.2 Label elements**
- **Labelling according to GB-CLP** The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS02

- **Signal word** Warning
- **Hazard statements**
H226 Flammable liquid and vapour.
- **Precautionary statements**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

(Contd. on page 2)

—GB—

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 1)

P501 Dispose of contents/container in accordance with local regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 64-17-5	Ethanol	25 – < 50%
EINECS: 200-578-6	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319	
Index number: 603-002-00-5	Specific concentration limit: Eye Irrit. 2; H319: C ≥ 50 %	
Reg.nr.: 01-2119457610-43-XXXX		

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **Information for doctor:** Treat symptomatically and supportively.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Flammable. Vapors may travel to source of ignition and flash back.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

(Contd. on page 3)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 2)

- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Do not inhale explosion gases or combustion gases.
 - Wear fully protective suit.
- **Additional information**
 - Absorb gas/vapours with water spray.
 - Cool endangered receptacles with water spray.
 - Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
 - Do not allow to penetrate the ground/soil.
 - Do not allow product to reach sewage system or any water course in the undiluted form.
 - Prevent seepage into sewage system, workpits and cellars.
- **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.
 - Ensure adequate ventilation.
- **6.4 Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Ensure good ventilation/exhaustion at the workplace.
 - Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
 - Keep ignition sources away - Do not smoke.
 - Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Store away from oxidising agents.
- **Further information about storage conditions:**
 - Store in cool, dry conditions in well sealed receptacles.
 - Protect from heat and direct sunlight.
- **Storage class:** 3
- **7.3 Specific end use(s)** No further relevant information available.

GB

(Contd. on page 4)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 3)

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

CAS: 64-17-5 Ethanol

WEL Long-term value: 1920 mg/m³, 1000 ppm

· DNELs

CAS: 64-17-5 Ethanol

Oral	Long-term systemic effects	87 mg/kg bw/day (general population)
Dermal	Long-term systemic effects	206 mg/kg bw/day (general population)
		343 mg/kg bw/day (worker)
Inhalative	Long-term systemic effects	114 mg/m ³ (general population)
		380 mg/m ³ (worker)
	Short-term local effects	950 mg/m ³ (general population)
		1,900 mg/m ³ (worker)

· PNECs

CAS: 64-17-5 Ethanol

Freshwater	960 µg/L
Freshwater - Intermittent releases	2.75 mg/L
Marine water	790 µg/L
Sewage Treatment Plant	580 mg/L
Sediment (freshwater)	3.6 mg/kg
Sediment (marine water)	2.9 mg/kg
Soil	630 µg/kg
Secondary poisoning	380 – 720 mg/kg food

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Take note of assigned Workplace Exposure Limits.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Ensure that eyewash stations and safety showers are close to the workstation location.

· **Respiratory protection:** Not necessary if room is well-ventilated.

· **Hand protection**


Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 5)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 4)

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye/face protection



Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

· Body protection:



Flame retardant antistatic protective clothing.

Body protection must be chosen depending on product properties, activity and possible exposure.

· **Environmental exposure controls** Do not let product enter drains. Risk of explosion.

· **Risk management measures** The operators shall be instructed adequately.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state

Liquid

· Colour:

Colourless

· Odour:

Characteristic

· Odour threshold:

Not determined.

· Melting point/freezing point:

Undetermined.

· Boiling point or initial boiling point and boiling range

78 °C (CAS: 64-17-5 Ethanol)

· Flammability

Flammable.

· Lower and upper explosion limit

· Lower:

2.5 Vol % (CAS: 64-17-5 Ethanol)

· Upper:

17 Vol % (CAS: 64-19-7 Acetic acid)

· Flash point:

29 °C

· Auto-ignition temperature:

> 350 °C (CAS: 64-17-5 Ethanol)

· Decomposition temperature:

Not determined.

· pH

Not determined.

· Viscosity:

· Kinematic viscosity

Not determined.

· Dynamic:

Not determined.

· Solubility

· water:

Fully miscible.

· Partition coefficient n-octanol/water (log value)

Not determined.

· Vapour pressure at 20 °C:

59 hPa (CAS: 64-17-5 Ethanol)

· Vapour pressure at 50 °C:

280 hPa

· Density and/or relative density

· Density at 20 °C:

0.942 g/cm³

· Relative density

Not determined.

(Contd. on page 6)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 5)

· Vapour density	Not determined.
· 9.2 Other information	
· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Solvent content:	
· VOC (EC)	30.00 %
· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Flammable liquid and vapour.
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable
· Oxidising liquids	Not applicable
· Oxidising solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	Not applicable
· Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
At elevated temperatures, explosive vapour/air mixtures may be formed.
- **10.3 Possibility of hazardous reactions** Reacts with oxidising agents.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:** Strong oxidising agents.
- **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

(Contd. on page 7)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 6)

· LD/LC50 values relevant for classification:
CAS: 64-17-5 Ethanol

Oral	LD50	> 10,000 mg/kg (rat)
Dermal	LD50	> 10,000 mg/kg (rabbit)
Inhalative	LC50/4 h	> 100 mg/l (rat)

· Primary irritant effect:
· 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 or 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.

· Subacute to chronic toxicity:

Prolonged or repeated skin contact may irritate and cause dermatitis.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the liver. This may result in impaired functions.

· Additional toxicological information:

Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

· 11.2 Information on other hazards
· Endocrine disrupting properties

None of the ingredients are listed.

SECTION 12: Ecological information

· 12.1 Toxicity
· Aquatic toxicity:
CAS: 64-17-5 Ethanol

EC50 (96 h) 454 mg/l (Bacteria)

· 12.2 Persistence and degradability Readily biodegradable

· 12.3 Bioaccumulative potential Contains components with the potential to bioaccumulate.

· 12.4 Mobility in soil No further relevant information available.

· 12.5 Results of PBT and vPvB assessment
· PBT: Not applicable.

· vPvB: Not applicable.

· 12.6 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects
· Additional ecological information:
· General notes:

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

GB

(Contd. on page 8)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 7)

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· Uncleaned packaging:

· Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

· Recommended cleansing agents: Large quantities of water

SECTION 14: Transport information

· 14.1 UN number or ID number

· ADR/RID/ADN, IMDG, IATA UN1170

· 14.2 UN proper shipping name

· ADR/RID/ADN UN1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
· IMDG ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
· IATA ETHANOL SOLUTION

· 14.3 Transport hazard class(es)

· ADR/RID/ADN


· Class 3 (F1) Flammable liquids.
· Label 3

· IMDG, IATA


· Class 3 Flammable liquids.
· Label 3

(Contd. on page 9)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 8)

· 14.4 Packing group	
· ADR/RID/ADN, IMDG, IATA	III
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Hazard identification number (Kemler code):	30
· Hazchem Code:	•2Y
· EMS Number:	F-E,S-D
· Stowage Category	A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR/RID/ADN	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

- **Regulated explosives precursors**

None of the ingredients are listed.

- **Regulated poisons**

None of the ingredients are listed.

- **Reportable explosives precursors**

None of the ingredients are listed.

- **Reportable poisons**

None of the ingredients are listed.

- **Control Of Major Accident Hazards Regulations 2015 (COMAH)**

- **Named dangerous substances - ANNEX I** None of the ingredients are listed.

- **COMAH category P5c**

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t

(Contd. on page 10)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 30% ethanol - 100ml

(Contd. of page 9)

- **National regulations:**
- **Information about limitation of use:**

Class	Share in %
II	10.0
NK	30.0

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

- **Relevant phrases**

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

- **Training hints**

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

- **Department issuing SDS:** Product safety department.

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

SECTION 1: Identification of the substance/mixture and of the company/undertaking**· 1.1 Product identifier****· Trade name:** 20% Silver Nitrate - 10ml**· Product Code:** 30-41-SS3**· Registration number** Mixture**· 1.2 Relevant identified uses of the substance or mixture and uses advised against****· Product category** PC21 Laboratory chemicals**· Application of the substance / the mixture** Laboratory chemicals**· Uses advised against**

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Any use involving aerosol formation or vapour release in excess of the assigned Workplace Exposure Limit where workers are exposed without suitable Respiratory Protective Equipment.

Processes involving the use of incompatible substances - refer to section 10.

Processes where workers who may be pregnant or breastfeeding could potentially come into direct contact with the undiluted product.

· 1.3 Details of the supplier of the safety data sheet**· Supplier:**

Severn Biotech Ltd.

Unit 2,

Park Lane,

Kidderminster,

Worcestershire.

DY11 6TJ

UK

Tel: 0044 1562 825286

Fax: 0044 1562 825284

email: info@severnbiotech.com

· Further information obtainable from: Product safety department.**· 1.4 Emergency telephone number:**

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification**· 2.1 Classification of the substance or mixture****· Classification according to GB-CLP**

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

Repr. 1B H360D May damage the unborn child.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

· 2.2 Label elements**· Labelling according to GB-CLP** The product is classified and labelled according to the GB CLP regulation.

(Contd. on page 2)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 1)

· Hazard pictograms



GHS05 GHS08 GHS09

· Signal word Danger

· Hazard-determining components of labelling:

Silver nitrate

· Hazard statements

H314 Causes severe skin burns and eye damage.

H360D May damage the unborn child.

H410 Very toxic to aquatic life with long lasting effects.

· Precautionary statements

P260 Do not breathe dusts or mists.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local regulations.

· Additional information:

Contains biocidal active substance(s): Silver nitrate

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· **Description:** Aqueous solution of the substance(s) listed below.

· Dangerous components:

CAS: 7761-88-8	Silver nitrate	10 – 25%
EINECS: 231-853-9	⚠ Ox. Sol. 2, H272; ⚠ Repr. 1B, H360D; ⚠ Met. Corr.1, H290;	
Index number: 047-001-00-2	Skin Corr. 1A, H314; Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400	
Reg.nr.: 01-2119513705-43-XXXX	(M=1000); Aquatic Chronic 1, H410 (M=100)	

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Rinse contaminated clothes (fire hazard) with plenty of water.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

(Contd. on page 3)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 2)

- **After skin contact:**
Remove contaminated shoes, socks and clothing whilst washing the affected skin with running water for 5 minutes.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Wash mouth out with water
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Information for doctor:**
Nitrates may cause effects on the blood, resulting in formation of methaemoglobin when ingested. The effects may be delayed. Medical observation is indicated.
- **4.2 Most important symptoms and effects, both acute and delayed** Cyanosis
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
Water spray
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Corrosive liquid.
In case of fire, the following can be released:
Nitrogen oxides (NO_x)
If product is allowed to dry, the substance is an oxidiser which may initiate the combustion of other materials.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.
- **6.2 Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
- **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.
Contaminated absorbent material may pose the same hazard as the spilt product.

(Contd. on page 4)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 3)

Wash the area with plenty of water.

Ensure adequate ventilation.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Safety showers and eye wash facilities should be available at the work area.

Rinse contaminated clothing with plenty of water (Fire hazard)

· Information about fire - and explosion protection: Keep respiratory protective device available.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground.

Store only in the original receptacle.

Do not store on combustible materials such as wooden floors or wooden pallets.

· Information about storage in one common storage facility: Store away from combustible materials.

· Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Store in a bunded area.

Protect from heat and direct sunlight.

Protect from frost.

· Storage class: 6.1 D

· 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

CAS: 7761-88-8 Silver nitrate

WEL Long-term value: 0.01 mg/m³
as Ag

· DNELs

CAS: 7761-88-8 Silver nitrate

Oral	Long-term systemic effects	110 µg/kg bw/day (general population)
Dermal	Long-term systemic effects	110 µg/kg bw/day (general population)
		220 µg/kg bw/day (worker)
Inhalative	Long-term systemic effects	150 µg/m ³ (general population)
		600 µg/m ³ (worker)

(Contd. on page 5)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 4)

· PNECs

CAS: 7761-88-8 Silver nitrate

Freshwater	46 ng/L
Marine water	860 ng/L
Sewage Treatment Plant	25 µg/L
Sediment (freshwater)	438.13 mg/kg
Sediment (marine water)	438.13 mg/kg
Soil	1.05 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Take note of assigned Workplace Exposure Limits.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Ensure that eyewash stations and safety showers are close to the workstation location.

Contaminated clothes are a fire hazard. Rinse with plenty of water.

· **Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

Acid gas cartridges with N95 filters are required when fumes or vapor may be generated.

· **Hand protection**



Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**



Tightly sealed goggles conforming to EN166.



Face shield/visor.

Use equipment tested and approved under appropriate government standards such as EN166 (EU) or NIOSH (US)

Use visor in combination with goggles.

(Contd. on page 6)

— GB —

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 5)

· Body protection:



Protective work clothing

Do not get on skin or clothing. Wear clothing and footwear that cannot be penetrated by the product. Suitable protective equipment may include: Chemical resistant boots, Chemical resistant apron, Full chemical protective suit with a hood, Chemical protective suit consisting of a jacket and trousers. The jacket should be buttoned up to the neck, sleeves sealed at the gloves, and trouser legs worn outside the boots. These precautions are required to prevent the clothing from accidentally trapping product against the skin.

- **Environmental exposure controls** Do not allow to enter drains, sewers or watercourses.
- **Risk management measures** The operators shall be instructed adequately.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Liquid
· Colour:	Off-white
· Odour:	Mild
· Odour threshold:	Not determined.
· Melting point/freezing point:	0 °C
· Boiling point or initial boiling point and boiling range	100 °C (CAS: 7732-18-5 Water)
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	Not applicable.
· Decomposition temperature:	Not determined.
· pH at 20 °C	4 – 5
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure:	Not determined.
· Density and/or relative density	
· Density at 20 °C:	~ 1.2 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.

· 9.2 Other information

· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	0.00 %

(Contd. on page 7)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 6)

· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Not applicable
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable
· Oxidising liquids	Not applicable
· Oxidising solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	Not applicable
· Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Acts as an oxidising agent on organic materials such as wood, paper and fats.
Reacts violently with ammonia.
Reacts with reducing agents.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:**
Combustible materials.
Reducing agents.
Ammonia
- **10.6 Hazardous decomposition products:**
Nitrogen oxides (NO_x)
Toxic metal oxide smoke

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

CAS: 7761-88-8 Silver nitrate

Oral LD50 > 2,000 mg/kg (rat)

(Contd. on page 8)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 7)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation** Causes serious eye damage.
- **Respiratory or 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** May damage the unborn child.
- **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.
- **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.
Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered.
Inorganic nitrate and nitrite substances are carcinogenic when present under conditions of endogenous nitrosation, i.e. if present in conjunction with secondary amines, under certain physical and thermal conditions, leading to the formation of hazardous and carcinogenic nitrosamines.
Absorption of significant amounts of nitrates may cause: abdominal pain; blue lips or fingernails; blue skin; dizziness; laboured breathing; confusion; convulsions; diarrhoea; headache; nausea; unconsciousness.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients are listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** Inorganic substance: not applicable
- **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Very toxic for aquatic organisms
Also poisonous for fish and plankton in water bodies.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

GB

(Contd. on page 9)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 8)

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

Do not mix with other waste streams.

· Uncleaned packaging:

· Recommendation:

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

· Recommended cleansing agents: Large quantities of water

SECTION 14: Transport information

· 14.1 UN number or ID number

· ADR/RID/ADN, IMDG, IATA UN1760

· 14.2 UN proper shipping name

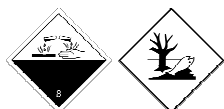
· ADR/RID/ADN UN1760 CORROSIVE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS
· IMDG CORROSIVE LIQUID, N.O.S. (SILVER NITRATE), MARINE POLLUTANT
· IATA CORROSIVE LIQUID, N.O.S.

· 14.3 Transport hazard class(es)

· ADR/RID/ADN


· Class 8 (C9) Corrosive substances.
· Label 8

· IMDG



· Class 8 Corrosive substances.

(Contd. on page 10)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended


Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 9)

· Label	8
· IATA	
	
· Class	8 Corrosive substances.
· Label	8
· 14.4 Packing group	
· ADR/RID/ADN, IMDG, IATA	II
· 14.5 Environmental hazards:	Product contains environmentally hazardous substances: Silver nitrate
· Marine pollutant:	Symbol (fish and tree)
· Special marking (ADR/RID/ADN):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Hazard identification number (Kemler code):	80
· Hazchem Code:	2X
· EMS Number:	F-A,S-B
· Segregation groups	(SGG7) Heavy metals and their salts (including their organometallic compounds)
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR/RID/ADN	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1760 CORROSIVE LIQUID, N.O.S. 8, II, ENVIRONMENTALLY HAZARDOUS

— GB —

(Contd. on page 11)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 10)

SECTION 15: Regulatory information

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

· Poisons Act

· Regulated explosives precursors

None of the ingredients are listed.

· Regulated poisons

None of the ingredients are listed.

· Reportable explosives precursors

None of the ingredients are listed.

· Reportable poisons

None of the ingredients are listed.

· Control Of Major Accident Hazards Regulations 2015 (COMAH)

· Named dangerous substances - ANNEX I None of the ingredients are listed.

· COMAH category E1

· Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t

· Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· Relevant phrases

H272 May intensify fire; oxidiser.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H360D May damage the unborn child.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· Training hints

This product should only be handled by workers who have received sufficient training in the safe handling and use of chemical products.

· Department issuing SDS: Product safety department.

· Abbreviations and acronyms:

ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

(Contd. on page 12)

Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 20% Silver Nitrate - 10ml

(Contd. of page 11)

PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Ox. Sol. 2: Oxidizing solids – Category 2
Met. Corr.1: Corrosive to metals – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Repr. 1B: Reproductive toxicity – Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

—GB—

Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

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

- **1.1 Product identifier**
- **Trade name:** 2.5% sodium carbonate, 0.02% formamide - 100ml
- **Product Code:** 30-41-SS4
- **Registration number** Mixture
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **Uses advised against** None identified
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to GB-CLP** The product is not classified, according to the GB CLP regulation.
- **2.2 Label elements**
- **Labelling according to GB-CLP** Not applicable
- **Hazard pictograms** Not applicable
- **Signal word** Not applicable
- **Hazard statements** Not applicable
- **Additional information:**
EUH210 Safety data sheet available on request.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** An aqueous solution of the substances listed below with multifunctional additives.

(Contd. on page 2)

—GB—

Safety data sheet

according to UK REACH (SI 2020/1577) as amended


Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 1)

· Dangerous components:			
CAS: 497-19-8 EINECS: 207-838-8 Index number: 011-005-00-2 Reg.nr.: 01-2119485498-19-XXXX	Sodium carbonate	 Eye Irrit. 2, H319	1 – 2.5%

· Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Not expected to present a significant hazard under anticipated conditions of normal use.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **Information for doctor:** Treat symptomatically and supportively.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
Not combustible.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

GB

(Contd. on page 3)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 2)

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Particular danger of slipping on leaked/spilled product.
- **6.2 Environmental precautions:** No special measures required.
- **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.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Storage class:** 12
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNELs

CAS: 497-19-8 Sodium carbonate

Inhalative	Long-term local effects	5 mg/m ³ (general population)
		10 mg/m ³ (worker)

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Avoid close or long term contact with the skin.
Avoid contact with the eyes.
Do not eat or drink while working.
Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.

(Contd. on page 4)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 3)

· Hand protection



For prolonged contact, use protective gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye/face protection



Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

· Body protection:



Protective work clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Liquid
· Colour:	Clear
· Odour:	Mild
· Odour threshold:	Not determined.
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	100 °C (CAS: 7732-18-5 Water)
· Flammability	Not applicable.
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	Not applicable.
· Decomposition temperature:	Not determined.
· pH at 20 °C	~ 9
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	23 hPa (CAS: 7732-18-5 Water)

(Contd. on page 5)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 4)

· Density and/or relative density	
· Density at 20 °C:	1.01 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· 9.2 Other information	
· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	0.02 %
· Change in condition	
· Evaporation rate	Not determined.
· Information with regard to physical hazard classes	
· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Not applicable
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable
· Oxidising liquids	Not applicable
· Oxidising solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	Not applicable
· Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
 - Carbon monoxide and carbon dioxide
 - Nitrogen oxides (NO_x)

GB

(Contd. on page 6)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 5)

SECTION 11: Toxicological information

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

· **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

CAS: 497-19-8 Sodium carbonate

Oral LD50 > 5,000 mg/kg (rat)

Dermal LD50 > 2,000 mg/kg (rabbit)

· Primary irritant effect:

· **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 or 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.

· **Subacute to chronic toxicity:** Prolonged or repeated skin contact may irritate and cause dermatitis.

· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients are listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

CAS: 497-19-8 Sodium carbonate

EC50 (96 h) 200 mg/l (Bacteria)

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects

· Additional ecological information:

· General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Recommended Hierarchy of Controls:

- Minimise waste;

(Contd. on page 7)

—GB—

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 6)

- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packaging:**

· **Recommendation:**

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR/RID/ADN, IMDG, IATA**

Not applicable

· **14.2 UN proper shipping name**

· **ADR/RID/ADN, IMDG, IATA**

Not applicable

· **14.3 Transport hazard class(es)**

· **ADR/RID/ADN, ADN, IMDG, IATA**

· **Class**

Not applicable

· **14.4 Packing group**

· **ADR/RID/ADN, IMDG, IATA**

Not applicable

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Not applicable.

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

· **UN "Model Regulation":**

Not applicable

SECTION 15: Regulatory information

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

· **Poisons Act**

· **Regulated explosives precursors**

None of the ingredients are listed.

· **Regulated poisons**

None of the ingredients are listed.

· **Reportable explosives precursors**

None of the ingredients are listed.

(Contd. on page 8)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 2.5% sodium carbonate, 0.02% formamide - 100ml

(Contd. of page 7)

· Reportable poisons

None of the ingredients are listed.

· Control Of Major Accident Hazards Regulations 2015 (COMAH)
· Named dangerous substances - ANNEX I None of the ingredients are listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· Relevant phrases

H319 Causes serious eye irritation.

· Department issuing SDS: Product safety department.

· Abbreviations and acronyms:

ADR: Accord relatif au transport international 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 Harmonised 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 (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

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

- **1.1 Product identifier**
- **Trade name:** 1% acetic acid - 100ml
- **Product Code:** 30-41-SS5
- **Registration number** 01-2119475328-30
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Product category** PC21 Laboratory chemicals
- **Application of the substance / the mixture** Laboratory chemicals
- **Uses advised against** None identified
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Severn Biotech Ltd.
Unit 2,
Park Lane,
Kidderminster,
Worcestershire.
DY11 6TJ
UK
Tel: 0044 1562 825286
Fax: 0044 1562 825284
email: info@severnbiotech.com
- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to GB-CLP** The product is not classified, according to the GB CLP regulation.
- **2.2 Label elements**
- **Labelling according to GB-CLP** Not applicable
- **Hazard pictograms** Not applicable
- **Signal word** Not applicable
- **Hazard statements** Not applicable
- **Additional information:**
EUH210 Safety data sheet available on request.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Aqueous solution of the substance(s) listed below.

(Contd. on page 2)

—GB—

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 1)

· Dangerous components:		
CAS: 64-19-7 EINECS: 200-580-7 Index number: 607-002-00-6 Reg.nr.: 01-2119475328-30-XXXX	Acetic acid ⚠ Flam. Liq. 3, H226; ⚠ Skin Corr. 1A, H314 Note: B Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90 % Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 % Met. Corr.1; H290: C ≥ 10 %	0.1 – 1%

- Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures**
- General information:** Not expected to present a significant hazard under anticipated conditions of normal use.
- After inhalation:** Supply fresh air; consult doctor in case of complaints.
- After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- Information for doctor:** Treat symptomatically and supportively.
- 4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media**
- Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- For safety reasons unsuitable extinguishing agents:** Water with full jet
- 5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Not combustible.
- 5.3 Advice for firefighters**
- Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
Do not inhale explosion gases or combustion gases.
- Additional information** Cool endangered receptacles with water spray.

GB

(Contd. on page 3)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 2)

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Particular danger of slipping on leaked/spilled product.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow product to reach sewage system or any water course in the undiluted form.
- **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.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Protect from frost.
Store in cool, dry conditions in well sealed receptacles.
- **Storage class:** 12
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

CAS: 64-19-7 Acetic acid

WEL	Short-term value: 50 mg/m ³ , 20 ppm
	Long-term value: 25 mg/m ³ , 10 ppm

- **DNELs**

CAS: 64-19-7 Acetic acid

Inhalative	Long-term local effects	25 mg/m ³ (general population)
		25 mg/m ³ (worker)
	Short-term local effects	25 mg/m ³ (general population)
		25 mg/m ³ (worker)

(Contd. on page 4)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 3)

· PNECs	
CAS: 64-19-7 Acetic acid	
Freshwater	3.058 mg/L
Freshwater - Intermittent releases	30.58 mg/L
Marine water	305.8 µg/L
Sewage Treatment Plant	85 mg/L
Sediment (freshwater)	11.36 mg/kg
Sediment (marine water)	1.136 mg/kg
Soil	470 µg/kg

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Take note of assigned Workplace Exposure Limits.

Do not inhale gases / fumes / aerosols.

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:** Not necessary if room is well-ventilated.

· **Hand protection**


Protective gloves.

Use gloves tested and approved under appropriate government standards such as NIOSH (US) or EN374 (EU).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye/face protection**


Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

· **Body protection:**


Protective work clothing

(Contd. on page 5)

— GB —

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 4)

Body protection must be chosen depending on product properties, activity and possible exposure.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Liquid
· Colour:	Clear
· Odour:	Vinegar
· Odour threshold:	1 - 5ppm
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	100 °C (CAS: 7732-18-5 Water)
· Lower and upper explosion limit	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	Not applicable.
· pH at 20 °C	2 – 3
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	-0.17 log POW
· Vapour pressure at 20 °C:	23 hPa (CAS: 7732-18-5 Water)
· Density and/or relative density	
· Density at 20 °C:	1.01 g/cm ³

· 9.2 Other information

NOTE: The physical data presented above are typical values and should not be construed as a specification.

· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
· VOC (EC)	1.00 %

· Information with regard to physical hazard classes

· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Not applicable
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable

(Contd. on page 6)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 5)

· Oxidising liquids	Not applicable
· Oxidising solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	Not applicable
· Desensitised explosives	Not applicable

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Heat and static discharge.
- **10.5 Incompatible materials:** Strong oxidising agents.
- **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- **LD/LC50 values relevant for classification:**

CAS: 64-19-7 Acetic acid

Inhalative LC50/4 h 40 mg/l (rat)

- **Primary irritant effect:**
- **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 or 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.
- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

None of the ingredients are listed.

SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

CAS: 64-19-7 Acetic acid

EC50 (96 h) > 300.82 mg/l (Daphnia)
> 300.82 mg/l (Fish)

(Contd. on page 7)

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 6)

EC50 (72 h) 300.82 mg/l (Algae)

- **12.2 Persistence and degradability** Readily biodegradable
- **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Recommended Hierarchy of Controls:
 - Minimise waste;
 - Reuse if not contaminated;
 - Recycle, if possible; or
 - Safe disposal (if all else fails).
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.
Contact waste processors for recycling information.
Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.
- **Uncleaned packaging:**
- **Recommendation:**
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
Disposal must be made according to official regulations.
Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- | | |
|---|----------------|
| <ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR/RID/ADN, IMDG, IATA | Not applicable |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR/RID/ADN, IMDG, IATA | Not applicable |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR/RID/ADN, ADN, IMDG, IATA · Class | Not applicable |

(Contd. on page 8)

GB

Safety data sheet

according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 7)

· 14.4 Packing group	
· ADR/RID/ADN, IMDG, IATA	Not applicable
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· UN "Model Regulation":	Not applicable

SECTION 15: Regulatory information

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

· **Poisons Act**

· **Regulated explosives precursors**

None of the ingredients are listed.

· **Regulated poisons**

None of the ingredients are listed.

· **Reportable explosives precursors**

None of the ingredients are listed.

· **Reportable poisons**

None of the ingredients are listed.

· **Control Of Major Accident Hazards Regulations 2015 (COMAH)**

· **Named dangerous substances - ANNEX I** None of the ingredients are listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

· **Relevant phrases**

H226 Flammable liquid and vapour.

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· **Department issuing SDS:** Product safety department.

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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 Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

(Contd. on page 9)

— GB —

Safety data sheet
according to UK REACH (SI 2020/1577) as amended

Printing date 14.05.2025

Version number 1

Revision: 14.05.2025

Trade name: 1% acetic acid - 100ml

(Contd. of page 8)

ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Flam. Liq. 3: Flammable liquids – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A

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