

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 07.10.2025

Version number 6 (replaces version 5)

Revision: 02.10.2025

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

· 1.1 Product identifier

- **Trade name:** **L 5014**
- **Article number:** 285138324
- **Description:** Acetic acid saturated with lithium chloride

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

- **Product category:** PC21 Laboratory chemicals
- **Process category:** PROC15 Use as laboratory reagent
- **Application of the substance / the preparation:** Electrolyte solution

· 1.3 Details of the supplier of the safety data sheet

· **Manufacturer/Supplier:**

Xylem Analytics Germany GmbH
Am Achalaich 11
82362 Weilheim
Germany

Kontakt: SI Analytics, Mainz
Tel. +49 6131 894-5111

- **Further information obtainable from:** E-Mail: msds.si@xylem.com

· 1.4 Emergency telephone number: Chemtrec: (USA & Canada) 800-424-9300 (International) 001 703-527-3887

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· **Classification according to Regulation (EC) No 1272/2008:**

Flam. Liq. 3 H226 Flammable liquid and vapour.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· 2.2 Label elements:

· **Labelling according to Regulation (EC) No 1272/2008:**

The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms:**



GHS02

GHS05

GHS07

- **Signal word:** Danger

· **Hazard-determining components of labelling:**

acetic acid

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· Hazard statements:

- H226 Flammable liquid and vapour.
- H312+H332 Harmful in contact with skin or if inhaled.
- H314 Causes severe skin burns and eye damage.

· Precautionary statements:

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- 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.
- P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

· 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

· Determination of endocrine-disrupting properties

CAS: 7447-41-8 lithium chloride

List III

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

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

· Dangerous components:

CAS: 64-19-7 EINECS: 200-580-7 Index number: 607-002-00-6	acetic acid ⚠ Flam. Liq. 3, H226; ⚠ Skin Corr. 1A, H314; ⚠ Acute Tox. 4, H312; Acute Tox. 4, H332 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90 % Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Dam. 1; H318: C ≥ 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	≥ 80 - < 90%
CAS: 7447-41-8 EINECS: 231-212-3	lithium chloride ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	≤ 10 - < 20%

· **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

· After inhalation:

Take affected persons into fresh air and keep quiet.
Seek immediate medical advice.

· After skin contact:

Remove all contaminated clothing immediately.
Wash skin with water/shower.
Consult a doctor immediately.

· After eye contact:

Rinse opened eye for several minutes under running water.
Consult an ophthalmologist immediately.
Remove contact lenses.

· After swallowing:

Make victim drink water immediately (2 glasses at most).

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Do not induce vomiting (risk of perforation)

Call a doctor immediately.

· **4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described on the labelling (see section 2.2) and/or in chapter 11.

· **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.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **5.2 Special hazards arising from the substance or mixture**

Vapors can form explosive mixture with air above 40 °C.

Development of corrosive and flammable vapors in the event of fire.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Stay in the danger zone only with self-contained breathing apparatus. Avoid skin contact by keeping a safe distance or wearing suitable protective clothing.

· **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**

Ensure adequate ventilation

Use respiratory protective device against the effects of fumes/dust/aerosol.

Keep away from ignition sources.

· **6.2 Environmental precautions:**

Suppress gases/fumes/haze with water spray.

Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Dilute with water and neutralise with e.g. caustic soda solution, sodium bicarbonate, calcium carbonate.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of the material collected according to 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 interior ventilation, especially at floor level. (Fumes are heavier than air).

Use solvent-proof equipment.

Prevent formation of aerosols.

· **Information about fire - and explosion protection:**

Keep away from sources of ignition and hot surfaces.

Protect against electrostatic charges.

Vapors can form explosive mixture with air above 40 °C.

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· 7.2 Conditions for safe storage, including any incompatibilities

· Requirements to be met by storerooms and receptacles:

Do not use metal containers.

Recommendation: Store in the original container.

Provide acid-resistant floor.

· Information about storage in one common storage facility: Store away from oxidising agents.

· Further information about storage conditions:

Keep container tightly sealed.

Store receptacle in a well ventilated area.

Recommended storage temperature: 15 - 25 °C

· 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

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

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

Take off contaminated clothing and wash it before reuse.

Wash hands before breaks and at the end of work.

· Respiratory protection:

Use suitable respiratory protective device only when aerosol or mist is formed.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Recommended filter type: Combination filter E-P2

· Hand protection Protective gloves recommended for frequent or long-term skin contact.

· Material of gloves

- For full contact:

Butyl rubber

Recommended thickness of the material: ≥ 0.5 mm

Breakthrough time: 480 min

- For splash contact:

Recommended material thickness: ≥ 0.5 mm

Breakthrough time: 480 min

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.

· Eye/face protection Tightly sealed goggles

· Environmental exposure controls Do not allow product to reach ground water, water course or sewage system.

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Colour:	Colourless
· Odour:	Pungent
· Odour threshold:	No data available.
· Melting point/freezing point:	ca. 16 °C
· Boiling point or initial boiling point and boiling range	119 °C
· Flammability	Flammable.
· Lower and upper explosion limit	
· Lower:	4.0 Vol %
· Upper:	17.0 Vol %
· Flash point:	40 °C (c.c.)
· Auto-ignition temperature:	485 °C
· Viscosity:	
· Kinematic viscosity at 20 °C	1.5 mm ² /s
· Dynamic viscosity:	No data available.
· Solubility	
· water:	Fully miscible.
· Partition coefficient n-octanol/water (log value)	-0.2 log POW (Eisessig)
· Vapour pressure at 20 °C:	16 hPa
· Density and/or relative density	
· Density at 20 °C:	1.09 g/cm ³

· 9.2 Other information

· Important information on protection of health and environment, and on safety.

· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Vapors can form explosive mixture with air above 40 °C.

· Information with regard to physical hazard classes

· Flammable liquids	Void Flammable liquid and vapour.
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SECTION 10: Stability and reactivity

· 10.1 Reactivity No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: Vapors can form explosive mixture with air above 40 °C.

· 10.3 Possibility of hazardous reactions

Violent reactions with strong alkalines an oxidants (e. g. chrome(VI) oxide, chromosulfuric acid, potassium permanganate, sodium peroxide, perchloric acid, phosphoros halides, hydrogen peroxide).
Reacts with base metals forming hydrogen.

· 10.4 Conditions to avoid No further relevant information available.

· 10.5 Incompatible materials: Metals

· 10.6 Hazardous decomposition products:

No dangerous decomposition products known.
In case of fire: See section 5.

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SECTION 11: Toxicological information

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

- **Acute toxicity** Harmful in contact with skin or if inhaled.
- **Acute toxicity estimate of the mixture (ATE) - Calculation method:**

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)

Oral	LD50	4683 mg/kg (Rat)
Dermal	LD50	1194 mg/kg (rabbit)
Inhalative	LC50	12.8 mg/l, 4 h (Rat)

CAS: 64-19-7 acetic acid

Oral	LD50	3310 mg/kg (Rat)
Dermal	LD50	1060 mg/kg (rabbit)
Inhalative	LC50	11.4 mg/l, 4 h (Rat) (IUCLID)

CAS: 7447-41-8 lithium chloride

Oral	LD50	526 mg/kg (Rat) (RTECS)
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· Primary irritant effect:

- **Skin corrosion/irritation** Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Severe irritations, risk of cornea cloudiness, risk of blindness.
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** 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.

· Additional toxicological information:

If ingested, severe burns of the mouth and throat, as well as a danger of the perforation of the oesophagus and the stomach.

· Acute effects (acute toxicity, irritation and corrosivity):

If ingested, severe burns of the mouth and throat, as well as a danger of the perforation of the oesophagus and the stomach.

11.2 Information on other hazards

· Endocrine disrupting properties

CAS: 7447-41-8	lithium chloride	List III
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SECTION 12: Ecological information

12.1 Toxicity

· Aquatic toxicity:

CAS: 64-19-7 acetic acid

EC50	47 mg/l, 24 h (Daphnia magna) (IUCLID)
LC50	75 mg/l, 96 h (Lepomis macrochirus) (IUCLID)

12.2 Persistence and degradability The organic part of the mixture is easily biodegradable.

12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.

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- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
This product does not contain components classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in concentrations of 0.1% or higher.
- **12.6 Endocrine disrupting properties** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects**
 - **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow product to reach ground water, water course or sewage system.
 - **Additional ecological information:**
 - **General notes:** Detrimental effect due to shift of pH value.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**
Disposal must comply with the relevant local regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose the special waste.
 - **European waste catalogue**

20 00 00	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01 00	separately collected fractions (except 15 01)
20 01 14*	acids
 - **Uncleaned packaging:**
 - **Recommendation:**
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
 - **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- **14.1 UN number or ID number**
 - **ADR/RID, IMDG, IATA** UN2789
- **14.2 UN proper shipping name**
 - **ADR/RID, IMDG, IATA** ACETIC ACID, GLACIAL
- **14.3 Transport hazard class(es)**
 - **ADR/RID**


 - **Class** 8 Corrosive substances.

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· Label	8+3
· IMDG	
	
· Class	8 Corrosive substances.
· Label	8/3
· IATA	
	
· Class	8 Corrosive substances.
· Label	8 (3)
· 14.4 Packing group	
· ADR/RID, IMDG, IATA	II
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Hazard identification number (Kemler code):	83
· EMS Number:	F-E,S-C
· Segregation groups	(SGG1) Acids
· Stowage Category	A
· Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· ADR/RID	
· Excepted quantities (EQ):	E2
· 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	D/E
· UN "Model Regulation":	UN 2789 ACETIC ACID, GLACIAL, 8 (3), II

SECTION 15: Regulatory information

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

· Directive 2012/18/EU

- Named dangerous substances - ANNEX I None of the ingredients is listed.
- Seveso category P5c FLAMMABLE LIQUIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 5000 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 50000 t

· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

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

SECTION 16: Other information

· Relevant phrases

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

· **Date of previous version:** 12.05.2021

· **Version number of previous version:** 5

· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

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)

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

Acute Tox. 4: Acute toxicity – Category 4

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

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

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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