

SAFETY DATA SHEET

Version: 2.0

Date written: 19 October 2011

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SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Name	acetic acid
Product Catalogue Name	LT-ACETIC-01
CAS-No.	64-19-7
Company:	Ludger Ltd Culham Science Centre Abingdon Oxfordshire OX14 3EB
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SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP].

Flammable liquids (Category 3), H226

Skin corrosion (Category 1A), H314

Serious eye damage (Category 1), H318

2.2 Label elements



Signal Word: Danger

Hazard Statement(s)

H314

Causes severe burns and eye damage.

H226

Flammable liquid and vapour.

Precautionary Statement(s)

P210

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

P280

Wear protective gloves/protective clothing/ face protection/eye protection.

P301 + P330 + P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

2.3 Other hazard information:

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.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Lachrymator

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Glacial acetic acid

Formula: $C_2H_4O_2$

Molecular Weight: 60.05g/mol

Component		Classification	Concentration
Name	Acetic Acid	Flam. Liq. 3; Skin Corr. 1A; Eye Dam. 1 H314, H226, H318 Concentration limits: ≥ 90 %: Skin Corr. 1A, H314; 25 - < 90 %: Skin Corr. 1B, H314; 10 - < 25 %: Skin Irrit. 2, H315; 10 - < 25 %: Eye Irrit. 2, H319; 10 - < 25 %: Eye Irrit. 2, H319; 10 - < 25 %: Skin Irrit. 2, H315; 25 - < 90 %: Skin Corr. 1B, H314; ≥ 90 %: Skin Corr. 1A, H314; ≥ 90 %	$\leq 100\%$
CAS-No.	64-19-7		
EC-No.	200-580-7		
Index-No	607-002-00-6		

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice

Consult a physician if exposure causes ill effects and if in any doubt. Show this safety data sheet to the physician/ first responder in attendance.

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

If skin is exposed

Remove any contaminated clothing immediately. Wash effected area well with plenty of soap and water.

If eyes are exposed

Rinse thoroughly with plenty of water or eye wash solution for at least 15 minutes.

If inhaled

Move person to fresh air supply. If not breathing give artificial respiration.

4.2 Most important symptoms and effects, both acute and delayed

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

SECTION 5. FIRE-FIGHTING MEASURES**5.1 Extinguishing media**

For small fires use extinguishing media such as dry chemical, carbon dioxide or "alcohol" foam.

For large fires apply water from as far away as possible, use large amounts of water, applied as mist or spray: solid streams of water may not be as effective. Cool all affected containers with large amounts of water.

5.2 Special hazards arising from the substance or mixture

No data available.

5.3 Advice for firefighters

Wear self contained breathing apparatus, if necessary. Use water spray to cool unopened containers if near the fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Wear personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Unnecessary staff to leave the immediate area of spillage.

6.2 Environmental Precautions

Do not let the chemical enter the drains.

6.3 Methods and material for containment and cleaning up

Contain the spill and collect with non-combustible absorbent material (such as sand, earth, diatomaceous earth and vermiculite) and place in a container for disposal. Keep in suitable, closed containers when waiting for disposal.

6.4 Reference to other sections

See Section 13 for suitable means of disposal of waste.

SECTION 7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid inhalation of vapour or mist. Keep away from any sources of ignition- No smoking.

Take measures to prevent electrostatic charge near/in the work area when handling the chemical.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry place. Keep the container tightly closed in a dry and well ventilated place. Containers once opened must be carefully re sealed and kept upright. This chemical is moisture sensitive.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

ACETIC ACID

CAS-No.	Value	Control Parameters	Update	Basis
64-19-7	TWA	10ppm 25mg/m ³	1991-07-05	Europe. Commission Directive 91/322/EEC on establishing indicative limit on values.
Remarks	Indicative			

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good laboratory and safety practice. Wash hands when leaving the lab and before entering the laboratory.

Personal Protective Equipment

Eye / face protection

Laboratory Safety Glasses.

Skin/Body protection

Laboratory Gloves and coat or similar covering over clothes. Gloves to satisfy the specifications of EU directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Chemical should be handled when open, under an operational fume hood.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: Liquid
Odour	Colour: Colourless
pH	pungent
Melting Point	2.4 at 60.05g/l
Initial boiling point and boiling range	16.2°C
Flash Point	117-118°C
Evaporation rate	40.0°C – closed
Flammability	No data available
Upper/lower explosive limits	High
Vapour Pressure	Lower = 4% (V)
Relative Density	Upper = 19.9% (V)
Solubility in water and solvents (mg/l)	73.3hPa at 50.0°C
Partition coefficient: n-octanol/water	15.2hPa at 20.0°C
Auto ignition temperature	1.049g/ml at 25°C
Decomposition temperature	Completely miscible
Viscosity	log Pow: - 0.17
Explosive properties	485°C
Oxidising properties	No data available
	No data available
	No data available
	No data available

9.2 Other information

No data available

SECTION 10. STABILITY AND REACTIVITY**10.1 Reactivity**

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to Avoid

Heat, flames and sparks

10.5 Incompatible materials

Oxidising agents, soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, Permanganates, e.g. Potassium permanganate, Amines, Alcohols.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions (Carbon oxides).

SECTION 11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral – Rat – 3,310 mg/kg

LC50 Inhalation – Mouse – 1h - 5620ppm

Remarks: Sense Organs and Special Senses (Nose, Eyes, Ears and Taste): Eyes: Conjunctive irritation.
Eyes: Other. Blood: Other changes.

LD50 Dermal – Rabbit – 1,112 mg/kg

Skin corrosion/irritation

Skin – Rabbit – Mild skin irritation – 24h

Serious eye damage/irritation

Eyes – Rabbit – causes serious eye damage

Respiratory or skin sensitisation

May cause sensitization by skin contact.

Germ cell mutagenicity

Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative

Test Type: Micronucleus test Species: Rat Cell type: Bone marrow Application Route: inhalation (vapor) Method: Mutagenicity (micronucleus test) Result: negative

Carcinogenicity

IARC: No component of this chemical present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available.

STOT-single exposure

No data available.

STOT-repeated exposure

No data available.

Aspiration hazard.

No data available.

Potential Health Hazards

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	May be harmful if swallowed. Causes severe burns.
Skin	May be harmful if absorbed through skin. Causes severe skin burns.
Eyes	Causes severe eye burns.

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: AF1225000 Signs and symptoms of exposure

Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, eyes and skin, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting.

Ingestion or inhalation of concentrated acetic acid causes damage to tissue of the respiratory and digestive tracts. Symptoms include: Hematemesis, bloody diarrhoea, edema and/or perforation of the esophagus and pylorus, pancreatitis, hematuria, anuria, uremia, albuminuria, hemolysis, convulsions, bronchitis, pulmonary edema, pneumonia, cardiovascular collapse, shock and death.

Direct contact or exposure to high concentrations of vapour with skin or eyes can cause: erythema, blisters, tissue destruction with slow healing, skin blacking, hyperkeratosis, fissures, corneal erosion, opacification, iritis, conjunctivitis and possible blindness.

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to Fish

LC50 – *Leuciscus idus* (Golden Orfe) – 410.00mg/l – 48h

LC50 – *Cyprinus carpio* (Carp) – 49.00mg/l – 48h

LC50 – Pimephales promelas (Fathead minnow) – 79.00 - 88.00mg/l – 96h

LC50 – Lepomis macrochirus – 75mg/l – 96h

Toxicity to Daphnia and other aquatic invertebrates.

EC50 – Daphnia magna (Water flea) – 65.00mg/l – 48h

12.2 Persistence and degradability

Biodegradability

Remarks: Expected to be biodegradable.

12.3 Bio accumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

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.

12.6 Endocrine disrupting properties

Product:

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
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12.7. Other adverse effects

Biochemical Oxygen Demand (BOD) - 880mg/g

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

This chemical is combustible and may be burned in a chemical incinerator equipped with an afterburner and scrubber. If not practical, use a licensed waste disposal service.

Contaminated packaging

Disposed of the packaging as unused/ waste product.

SECTION 14. TRANSPORT INFORMATION

14.1 UN Number

ADR/RID: 2789	IMDG: 2789	IATA: 2789
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14.2 UN Proper Shipping Name

ADR/RID: ACETIC ACID, GLACIAL	IMDG: ACETIC ACID, GLACIAL	IATA: ACETIC ACID, GLACIAL
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14.3 Transport hazard class(es)

ADR/RID: 8 (3)	IMDG: 8 (3)	IATA: 8 (3)
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14.4 Packing group

ADR/RID: II	IMDG: II	IATA: II
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14.5 Environmental hazards

ADR/RID: -	IMDG Marine pollutant: No	IATA: -
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14.6 Other information

IMDG: EMS-No: F-E, S-C

SECTION 15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Please note that the label elements, hazard and precautionary statements that used to be Section 15 are now in Section 2.

SECTION 16. OTHER INFORMATION

The advice offered is derived from the current available information on the hazardous materials in this product and its component(s). Consideration has been made regarding the quantities offered in the pre-dispensed container. The advice offered is, therefore not all inclusive nor should it be taken as the descriptive of the compound generally.