

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 05-May-2009

Revision Date 29-Sep-2023

Revision Number 13

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description:	Acetic acid
Cat No. :	295310000; 295310050; 295310250
Synonyms	Ethanoic acid; Glacial acetic acid; Methanecarboxylic acid
Index No	607-002-00-6
CAS No	64-19-7
EC No	200-580-7
Molecular Formula	C2 H4 O2
REACH registration number	01-2119475328-30

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

Recommended Use Sector of use	Laboratory chemicals. SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
Product category	PC21 - Laboratory chemicals
Process categories	PROC15 - Use as a laboratory reagent
Environmental release category	ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
Uses advised against	No Information available

1.3. Details of the supplier of the safety data sheet

UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Acetic acid

Flammable liquids

Health hazards

Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation

Environmental hazards

Based on available data, the classification criteria are not met

Category 3 (H226)

Category 1 A (H314) Category 1 (H318)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H226 - Flammable liquid and vapor

H314 - Causes severe skin burns and eye damage

Precautionary Statements

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

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

P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Acetic acid	64-19-7	200-580-7	>95	Flam. Liq. 3 (H226) Skin Corr. 1A (H314) Eye Dam. 1 (H318)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Acetic acid	Skin Corr. 1A (H314) :: C>=90% Skin Corr. 1B (H314) :: 25%<=C<90% Eye Irrit. 2 (H319) :: 10%<=C<25% Skin Irrit. 2 (H315) :: 10%<=C<25%	-	-

REACH registration number	01-2119475328-30

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.			
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.			
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.			
Ingestion	Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.			
Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately.			
Self-Protection of the First Aider	Use personal protective equipment as required.			
4.2. Most important symptoms and e	effects, both acute and delayed			
	Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting			
4.3. Indication of any immediate me	dical attention and special treatment needed			
Notes to Physician	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.			
SECTION 5: FIREFIGHTING MEASURES				

5.1. Extinguishing media

Suitable Extinguishing Media

Acetic acid

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Thermal decomposition can lead to release of irritating gases and vapors.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Corrosives area. Keep away from heat, sparks and flame. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510Class 3Storage Class (LGK) (Germany)Class 3

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Acetic acid	STEL: 37 mg/m ³	TWA: 25 mg/m ³ (15min)	TWA: 20 ppm 8 hr.
	STEL: 15 ppm	TWA: 10 ppm (15min)	TWA: 50 mg/m ³ 8 hr.
	TWA: 10 ppm	STEL: 50 mg/m ³ (8h)	STEL: 20 ppm 15 min
	TWA: 25 mg/m ³	STEL: 20 ppm (8h)	STEL: 50 mg/m ³ 15 min

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

Workers; See table for values

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Acetic acid 64-19-7(>95)	DNEL = 25mg/m ³		DNEL = 25mg/m ³	

Predicted No Effect Concentration (PNEC)

See values below.

Γ	Component	Fresh water		Water Intermittent	Microorganisms in	Soil (Agriculture)
			sediment		sewage treatment	
Γ	Acetic acid	PNEC = 3.058mg/L	PNEC =	PNEC = 30.58mg/L	PNEC = 85mg/L	PNEC = 0.47mg/kg
	64-19-7(>95)		11.36mg/kg			soil dw
			sediment dw			

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Acetic acid 64-19-7 (>95)	PNEC = 0.3058mg/L	PNEC = 1.136mg/kg			
	0.0000mg/E	sediment dw			

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective ed Eye Protection		aling safety goggles	or Face protection shie	eld Goggles (European standard - EN
Hand Protection	Protecti	ve gloves		
Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	> 480 minutes	0.7 mm	EN 374	(minimum requirement)
Skin and body pro	tection Long sle	eeved clothing.		
Ensure gloves are suita	so take into consideratio	al compatability, Dex n the specific local co		ditions, User susceptibility, e.g. he product is used, such as the danger
Respiratory Protec	appropr To prote	iate certified respirate	ors.	exposure limit they must use nent must be the correct fit and be used
Large scale/emergenc	are exce Recom	eeded or if irritation of	r other symptoms are e Particulates filter conf	6 approved respirator if exposure limits experienced orming to EN 143 Acid gases filter Type
Small scale/Laborator	limits ar	e exceeded or if irrita	tion or other symptoms	9:2001 approved respirator if exposure s are experienced. 5; or; Half mask: EN140; plus filter, EN

Environmental exposure controls Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

When RPE is used a face piece Fit Test should be conducted

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point	Colorless vinegar-like No data available 16 - 16.5 °C / 60.8 - 61.7 °F No data available	
Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	117 - 118 °C / 242.6 - 244.4 °F Flammable Not applicable Lower 4 vol%	On basis of test data Liquid
Flash Point Autoignition Temperature Decomposition Temperature	Upper 19.9 vol% 40 °C / 104 °F 427 °C / 800.6 °F No data available	Method - No information available
pH Viscosity Water Solubility Solubility in other solvents Partition Coefficient (n-octanol/wate	< 2.5 1.53 mPa.s @ 25 °C Miscible No information available	10 g/L aq.sol

Acetic acid

Revision Date 29-Sep-2023

Acetic	
ACETIC	acin
ACCILC	aoia

Component
Acetic acid
Vapor Pressure
Density / Specific Gravity
Bulk Density
Vapor Density
Particle characteristics

9.2. Other information

Molecular Formula Molecular Weight Explosive Properties Evaporation Rate log Pow -0.2 1.52 kPa @ 20 °C 1.048 Not applicable 2.10 Not applicable (liquid)

Liquid (Air = 1.0)

C2 H4 O2 60.05 explosive air/vapour mixtures possible 0.97 (Butyl Acetate = 1.0)

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	None known, based on information available	
10.2. Chemical stability	Stable under normal conditions.	
10.3. Possibility of hazardous reactions		
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.	
10.4. Conditions to avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.	
10.5. Incompatible materials	Strong oxidizing agents. Strong bases. Metals.	
10.6. Hazardous decomposition products		

Carbon monoxide (CO). Carbon dioxide (CO₂). Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;	
Oral	No data available
Dermal	No data available
Inhalation	No data available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic acid	3310 mg/kg (Rat)	-	> 40 mg/L (Rat)4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation;	No data available
(d) respiratory or skin sensitization Respiratory Skin	No data available No data available
(e) germ cell mutagenicity;	No data available
	Not mutagenic in AMES Test
(f) carcinogenicity;	No data available
	There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	No data available
(h) STOT-single exposure;	No data available
(i) STOT-repeated exposure;	No data available
Target Organs	No information available.
(j) aspiration hazard;	Based on available data, the classification criteria are not met
Symptoms / effects,both acute and delayed	Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
11.2. Information on other hazards	

Endocrine Disrupting Properties As

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity Ecotoxicity effects

Acetic acid

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Acetic acid	Pimephales promelas: LC50 = 88 mg/L/96h Lepomis macrochirus: LC50 = 75 mg/L/96h	EC50 = 95 mg/L/24h	-

Component	Microtox	M-Factor
Acetic acid	Photobacterium phosphoreum: EC50 = 8.8 mg/L/15 min	
	Photobacterium phosphoreum: EC50 = 8.8	
	mg/L/25 min	
	Photobacterium phosphoreum: EC50 = 8.8 mg/L/5	
	min	

<u>12.2. Persistence and degradability</u> Persistence Degradation in sewage treatment plant	Expected to be biodegradable Miscible with water, Persistence is unlikely, based on information available. Neutralization is normally necessary before waste water is discharged into water treatment plants.	
12.3. Bioaccumulative potential	Bioaccumulation is unlikely	
Component	log Pow	Bioconcentration factor (BCF)
Acetic acid	-0.2	No data available
<u>12.4. Mobility in soil</u>	The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils	
<u>12.5. Results of PBT and vPvB</u> assessment	Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).	
<u>12.6. Endocrine disrupting</u> <u>properties</u> Endocrine Disruptor Information	This product does not contain any known or su	spected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or suspected substance This product does not contain any known or suspected substance	
SE	CTION 13: DISPOSAL CONSIDER	ATIONS
13.1. Waste treatment methods		

Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number	UN2789
14.2. UN proper shipping name	ACETIC ACID, GLACIAL
14.3. Transport hazard class(es)	8
Subsidiary Hazard Class	3

Acetic acid

14.4. Packing group

<u>ADR</u>

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN2789 ACETIC ACID, GLACIAL 8 3 II
ΙΑΤΑ	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN2789 ACETIC ACID, GLACIAL 8 3 II
14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

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SECTION 15: REGULATORY INFORMATION

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Acetic acid	64-19-7	200-580-7	-	-	Х	Х	Х	Х	Х
Component	CAS No	TSCA		ation -	DSL	NDSL	AICS	NZIoC	PICCS
			Active-	Inactive					
Acetic acid	64-19-7	Х	ACT	IVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Acetic acid	64-19-7	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report
		Notification	Requirements
Acetic acid	64-19-7	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Acetic acid	WGK1	Class II : 0.10 g/m ³ (Massenkonzentration)

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Acetic acid 64-19-7 (>95)	Prohibited and Restricted Substances	Group I	

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H226 - Flammable liquid and vapor

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b)
	Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical	DSL/NDSL - Canadian Domestic Substances List/Non-Domestic
Substances/EU List of Notified Chemical Substances	Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances	ENCS - Japanese Existing and New Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	AICS - Australian Inventory of Chemical Substances NZIOC - New Zealand Inventory of Chemicals
 WEL - Workplace Exposure Limit ACGIH - American Conference of Governmental Industrial Hygienists DNEL - Derived No Effect Level RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic 	 TWA - Time Weighted Average IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC) LD50 - Lethal Dose 50% EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code OECD - Organisation for Economic Co-operation and Development BCF - Bioconcentration factor Key literature references and sources for data https://echa.europa.eu/information-on-chemicals Suppliers safety data sheet, Chemadvisor - LOLI, Merck index,	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Training Advice

Acetic acid

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Creation Date	05-May-2009
Revision Date	29-Sep-2023
Revision Summary	Not applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet