

Safety Data Sheets, 16 sections and what information they provide

1

- Identification
- Identifies what the chemical is, recommended uses, and provides contact information of supplier.

2

- Hazard Identification
- Identifies hazards of the chemical and appropriate warning information associated with those hazards. This is where you will find pictograms and signal words to alert you to precautions needed when handling and using this substance.

3

- Composition
- Identifies the ingredients in the chemical. Most chemicals are a mixture, so understanding what chemicals make that mixture will let you make more informed decisions.

4

- First Aid Measures
- Describes the initial care that should be given by untrained responders to person exposed to chemical. This is crucial information for how to get an exposed person immediate help while professionals arrive.

5

- Fire Fighting Measures
- Recommendations for fighting a fire caused by the chemical. Fire extinguishers come in different formulas, check this section before using whatever is in reach. Some extinguishers may not work while others may make the fire worse.

6

- Accidental Release Measures
- Recommendations on appropriate response to spills, leaks, or releases.

Sigma-Aldrich www.sigmaaldrich.com

SAFETY DATA SHEET Version 6.9
Revision Date 07/25/2023
Print Date 10/21/2023

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

1.1 Product identifiers

Product name : Acetone

Product Number : 179124
Brand : SIGALD
Index-No. : 606-001-00-8
CAS-No. : 67-64-1

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week


SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram 

Signal Word : Danger

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SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : C₃H₆O
Molecular weight : 58.08 g/mol
CAS-No. : 67-64-1
EC-No. : 200-662-2
Index-No. : 606-001-00-8

Component	Classification	Concentration
acetone	Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H336	<= 100 % Concentration limits:

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	>= 20 %: STOT SE 3, H336;	
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For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: Immediately make victim drink water (two glasses at most). Consult a physician.

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

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

- 5.1 Extinguishing media**
- Suitable extinguishing media**
Carbon dioxide (CO₂) Foam Dry powder
- Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.
- 5.2 Special hazards arising from the substance or mixture**
Carbon oxides
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.
- 5.3 Advice for firefighters**
In the event of fire, wear self-contained breathing apparatus.
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- 5.4 Further information**
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
- 6.2 Environmental precautions**
Do not let product enter drains. Risk of explosion.
- 6.3 Methods and materials for containment and cleaning up**
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemzorb®). Dispose of properly. Clean up affected area.
- 6.4 Reference to other sections**
For disposal see section 13.

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- Handling and Storage
- Guidance on the safe handling practices and conditions for safe storage of the chemical. Reference this when choosing how and where to store your chemicals.

8

- Exposure Controls and Personal Protection
- Indicates the exposure limits, engineering controls and personal protective measures to limit worker exposure. This will be a guide for recommended PPE when using this substance.

9

- Physical and Chemical Properties
- Identification of physical and chemical properties of the chemical. This is helpful so you don't have to open the container to determine if it's a solid, liquid, powder, gas, etc.

10

- Stability and Reactivity
- Information is broken into three parts; reactivity, chemical stability and other. This information is helpful to let you know what you shouldn't mix this substance with.

11

- Toxicological Information
- Identifies the toxicological and health effect information or indicates that such data does not exist.

12

- Ecological information
- Non-mandatory but provides information to evaluate the environmental impact of the chemical if released. This is a great indicator of why the chemical can not be disposed of in landfill trash or down the drain.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
acetone	67-64-1	TWA	250 ppm	USA, ACGIH Threshold Limit Values (TLV)
		Remarks	Not classifiable as a human carcinogen	USA, ACGIH Threshold Limit Values (TLV)
		STEL	500 ppm	USA, ACGIH Threshold Limit Values (TLV)
			Not classifiable as a human carcinogen	
		TWA	250 ppm	USA, NIOSH Recommended Exposure Limits
		TWA	1,000 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1
			2,400 mg/m ³	Limits for Air Contaminants
		C	3,000 ppm	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Form: clear, liquid Color: colorless
b) Odor	pungent, weakly aromatic
c) Odor Threshold	0.1 ppm
d) pH	5 - 6 at 395 g/l at 20 °C (68 °F)
e) Melting point/freezing point	Melting point/range: -94 °C (-137 °F) - lit.
f) Initial boiling point and boiling range	56 °C 133 °F at 1,013 hPa - lit.
g) Flash point	-17,0 °C (1,4 °F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 13 %(V) Lower explosion limit: 2 %(V)
k) Vapor pressure	245.3 hPa at 20.0 °C (68.0 °F)
l) Vapor density	No data available
m) Density	0.791 g/cm ³ at 25 °C (77 °F) - lit.
	Relative density
n) Water solubility	soluble, in all proportions
o) Partition coefficient: n-octanol/water	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapors may form explosive mixture with air.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

chromosulfuric acid
chromyl chloride
ethanolamine
Fluorine
Strong oxidizing agents
strong reducing agents
Nitric acid
chromium(VI) oxide
Risk of explosion with:
nonmetallic oxaldehydes
halogen-halogen compounds
chloroform
nitroating acid
nitrosyl compounds
hydrogen peroxide
halogen oxides
organic nitro compounds
peroxy compounds
Exothermic reaction with:
Bromine
Alkali metals
alkali hydroxides
Halogenated hydrocarbon
Sulfur dichloride
phosphorous oxichloride

10.4 Conditions to avoid

Warning.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - 5,800 mg/kg
Remarks: (ECHA)
LC50 Inhalation - Rat - 4 h - 76 mg/l - vapor
Remarks: (IUCLED)
Unconsciousness
Drowsiness
Dizziness
(External MSDS)
LD50 Dermal - Rabbit - 20,000 mg/kg
Remarks: (IUCLED)
Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation - 24 h
(Draize Test)
Remarks: (RTECS)
Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h
(Draize Test)
Remarks: (RTECS)
Respiratory or skin sensitization
Maximization Test - Guinea pig
Result: Not a skin sensitizer.
Remarks: (ECHA)
Chronic exposure may cause dermatitis.
Germ cell mutagenicity
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: Ames test

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
Flow-through test LC50 - Pimephales promelas (fathead minnow) - 6.210 mg/l - 96 h
(OECD Test Guideline 203)

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Toxicity to daphnia and other aquatic invertebrates
static test LC50 - Daphnia pulex (Water flea) - 8,800 mg/l - 48 h
Remarks: (ECHA)

Toxicity to algae
static test NOEC - M.aeruginosa - 530 mg/l - 8 d
(OECD 384/2)
Remarks: (maximum permissible toxic concentration)
(IUCLED)

Toxicity to bacteria
static test EC50 - activated sludge - 61.15 mg/l - 30 min
(OECD Test Guideline 209)

Toxicity to daphnia and other aquatic invertebrates/Chronic toxicity
Flow-through test NOEC - Daphnia magna (Water flea) - 2,212 mg/l - 28 d
Remarks: (ECHA)

12.2 Persistence and degradability
Biodegradability
static test - Pressure time 28 d
Result: 91 % - Readily biodegradable.
(OECD Test Guideline 301B)

Biological Oxygen Demand (BOD)
1,850 mg/g
Remarks: (IUCLED)

Chemical Oxygen Demand (COD)
2,070 mg/g
Remarks: (IUCLED)

Theoretical oxygen demand
2,200 mg/g
Remarks: (L.I.)

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No data available

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- Disposal Considerations
- Non-mandatory but provides guidance on proper disposal practices, recycling or reclaiming the chemicals or its container, and safe handling practices. Always consult EHRS for clarification or questions.

14

- Transportation Information
- Non-mandatory but provides guidance on classification information for shipping and transporting of the chemical by road, air, rail, or sea.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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SECTION 14: Transport information

DOT (US)

UN number: 1090 Class: 3 Packing group: II
 Proper shipping name: Acetone
 Reportable Quantity (RQ): 5000 lbs
 Poison Inhalation Hazard: No

IMDG

UN number: 1090 Class: 3 Packing group: II EMS-No: F-E, S-D
 Proper shipping name: ACETONE

IATA

UN number: 1090 Class: 3 Packing group: II
 Proper shipping name: Acetone

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- Regulatory Information
- Non-mandatory but identifies the safety, health, and environmental regulations specific for the chemical that are not states elsewhere on the SDS.

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- Other information
- States when the SDS was prepared or when the last known revision was made.

SECTION 15: Regulatory information

SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311 / 312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Component	CAS-No.	Revision Date
acetone	67-64-1	1993-02-16

Pennsylvania Right To Know Components

Component	CAS-No.	Revision Date
acetone	67-64-1	1993-02-16

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SECTION 16: Other information

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.