

Safety Data Sheet

Revision date: 07.12.2022

Version: 7.2

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

1.1 Product identifier

Trade name/designation:	Acetone TECHNICAL
Product No.:	20063
CAS No.:	67-64-1
Other means of identification:	2-Propanone, Dimethyl ketone, DMK, Propanone

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

Relevant identified uses:	General chemical reagent
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1.3 Details of the supplier of the safety data sheet

Singapore

VWR Singapore Pte Ltd.

Street	18 Gul Drive
Postal code/City	Singapore 629468
Telephone	+65 6505 0760
Telefax	+65 6264 3780
E-mail (competent person)	SDS@avantorsciences.com

1.4 Emergency phone number

Telephone	+65 (0) 6505 0760 (office hours: 8 am-5 pm)
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SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Hazard classes and hazard categories	Hazard statements
Flammable liquid, category 2	H225
Eye irritation, category 2	H319
Specific target organ toxicity (single exposure), category 3, narcotic effect	H336

2.2 Label elements

Hazard pictograms



Signal word: Danger

Hazard statements	
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P243	Take precautionary measures against static discharge.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash ... thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P242	Use only non-sparking tools.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/.../if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use... to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to ...

2.3 Other hazards

none

SECTION 3: Composition / information on ingredients

3.1 Substances

Substance name	Acetone
Molecular formula	CH ₃ COCH ₃
Molecular weight	58.08 g/mol
CAS No.	67-64-1

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Do not leave affected person unattended. If unconscious but breathing normally, place in recovery position and seek medical advice. Take off immediately all contaminated clothing. Highly flammable liquid and vapour. Wash contaminated clothing before reuse. When in doubt or if symptoms are observed, get medical advice.

After inhalation

Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician.

In case of skin contact

Remove contaminated, saturated clothing immediately. Wash off any skin contamination immediately. When in doubt or if symptoms are observed, get medical advice.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Consult an ophthalmologist.

In case of ingestion

Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person or a person with cramps. Call a POISON CENTER.

Self-protection of the first aider

First aider: Pay attention to self-protection! Wear personal protection equipment (refer to section 8). In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

4.2 Most important symptoms and effects, both acute and delayed

Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation). In severe cases, pneumonia or a pulmonary oedema may develop. May cause headaches, nausea, vomiting and gastrointestinal disturbances. Conjunctivitis. Unconsciousness.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours. Monitor respiration. Apply cortisone spray at early stage. After swallowing: activated charcoal (20-60 g) and sodium sulfate (1 tablespoon/250 ml) should reduce absorption.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Combustible substance.

Co-ordinate fire-fighting measures to the fire surroundings.

Water.

Foam.

Dry extinguishing powder.

Extinguishing media which must not be used for safety reasons

Full water jet.

5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated:

Carbon monoxide

Carbon dioxide (CO₂).

5.3 Advice for firefighters

Combustible substance.

Causes serious eye irritation.

Additional information

Wear a self-contained breathing apparatus and chemical protective clothing.
Fight fire with normal precautions from a reasonable distance.
Use water spray jet to protect personnel and to cool endangered containers.
In case of fire: Evacuate area.
Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Avoid contact with eyes and skin. Do not breathe gas/fumes/vapour/spray. Keep away from sources of ignition - No smoking. Provide adequate ventilation. Remove victim out of the danger area. First Aid, decontamination, treatment of symptoms.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Fire hazard.

6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Dispose according to local legislation. Ventilate affected area.

6.4 Additional information

Personal protection equipment: see section 8 Disposal information: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling
Use extractor hood (laboratory).
Use only in well-ventilated areas.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Avoid contact with eyes and skin.
Use personal protective equipment as required.
Measures to prevent fire, aerosol and dust generation
Usual measures for fire prevention.
Use only in well-ventilated areas.
Take precautionary measures against static discharges.
Measures required to protect the environment
Do not empty into drains.
Collect spillage.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: 15-25°C
Storage class: 3
Keep container tightly closed and in a well-ventilated place. Keep/Store away from combustible materials. Protect from sunlight.
Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Unsuitable container/equipment material: Metal PP (Polypropylene)

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredient (Designation)	Source	Country	parameter	Limit value	Remark
Acetone	Workplace Safety and Health (General Provisions) Regulations, WORKPLACE SAFETY AND HEALTH ACT (CHAPTER 354A, SECTION 65)	SG	LTV	750 ppm - 1780 mg/m ³	
Acetone	Workplace Safety and Health (General Provisions) Regulations, WORKPLACE SAFETY AND HEALTH ACT (CHAPTER 354A, SECTION 65)	SG	STV	1000 ppm - 2380 mg/m ³	

8.2 Exposure controls

8.2.1 Appropriate engineering controls

no data available

8.2.2 Personal protection equipment

no data available

Eye/face protection

no data available

Recommendation: no data available

Skin protection

no data available

By short-term hand contact

Suitable material:

CR (polychloroprene, chloroprene rubber)

Thickness of the glove material:

0,75 mm

Breakthrough time::

< 30 min

Recommended glove articles:

VWR 112-2308

By long-term hand contact

Suitable material:	Butyl caoutchouc (butyl rubber)
Thickness of the glove material:	0,50 mm
Breakthrough time::	> 480 min
Recommended glove articles:	VWR 112-1570

Respiratory protection

no data available

Suitable respiratory protection apparatus:	no data available
Recommendation:	no data available
Suitable material:	no data available
Recommendation:	no data available

Additional information

no data available

8.2.3 *Environmental exposure controls*
no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Colour:	colourless
(b) Odour:	characteristic
(c) Odour threshold:	no data available

Safety relevant basic data

(d) pH:	5-6 (400 g/l; H ₂ O; 20 °C)
(e) Melting point/freezing point:	-95.4 °C
(f) Initial boiling point and boiling range:	56.2 °C (1013 hPa)
(g) Flash point:	-20 °C (closed cup)
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	Highly flammable liquid and vapour.
(j) Flammability or explosive limits	
Lower explosion limit:	2.6 % (v/v)
Upper explosion limit:	12.8 % (v/v)
(k) Vapour pressure:	233 hPa (20 °C)
(l) Vapour density:	2.01 (20 °C)
(m) Density:	0.792 g/cm ³ (20 °C)
(n) Solubility(ies)	
Water solubility:	soluble (20 °C)
(o) Partition coefficient: n-octanol/water:	-0.24 (20 °C)
(p) Auto-ignition temperature:	465 °C (DIN 51794)
(q) Decomposition temperature:	not applicable
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	0.32 mPa*s (20 °C)
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable
(u) Particle characteristics:	does not apply to liquids

9.2 Other information

Bulk density:	no data available
Refraction index:	1.3591 (589 nm; 20 °C)
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- Vapour can form explosive mixtures with air.
- Risk of ignition.
- Risk of ignition if heated.

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Formation of explosive mixtures with:

Oxidising agent, strong

Chlorine

Iodine

Peroxides

10.4 Conditions to avoid

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

10.5 Incompatible materials

Rubber articles

Plastic articles

10.6 Hazardous decomposition products

Decomposition products in case of fire: see section 5.

10.7 Additional information

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity:

LD50: > 5800 mg/kg - Rat - (RTECS)

Acute dermal toxicity:

LD50: > 20000 mg/kg - Rabbit - (IUCLID)

Acute inhalation toxicity:

LC50: > 76 mg/l (4 h) - Rat

Irritant and corrosive effects:

Primary irritation to the skin:

not applicable

Irritation to eyes:

Causes serious eye irritation.

Irritation to respiratory tract:

not applicable

Respiratory or skin sensitisation

In case of skin contact: not sensitising

After inhalation: not sensitising

STOT-single exposure

May cause drowsiness or dizziness.

STOT-repeated exposure

not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**Carcinogenicity**

No indication of human carcinogenicity.

Germ cell mutagenicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

No indications of human reproductive toxicity exist.

Aspiration hazard

not applicable

Other adverse effects

no data available

Additional information

no data available

11.2 Endocrine disrupting properties:

This substance does not have endocrine disrupting properties with respect to humans.

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:

LC50: 8300 mg/l (96 h) - Cairns, J.Jr., and A. Scheier 1968. A Comparison of the Toxicity of Some Common Industrial Waste Components Tested Individually and Combined. Prog.Fish-Cult. 30(1):3-8

Daphnia toxicity:

EC50: 18500 mg/l (48 h) - Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J.Water Pollut.Control Fed. 52(8):2117-2130

LC50: 8450 mg/l (48 h) - Cowgill, U.M., and D.P. Milazzo 1991. The Sensitivity of Ceriodaphnia dubia and Daphnia magna to Seven Chemicals Utilizing the Three-Brood Test. Arch.Environ.Contam.Toxicol. 20(2):211-217

Algae toxicity:

EC50: 7200 mg/l (96 h) - Slooff, W. 1982. A Comparative Study on the Short-Term Effects of 15 Chemicals on Fresh Water Organisms of Different Tropic Levels. Natl.Tech.Inf.Serv., Springfield, VA :25 p. (DUT) (ENG ABS) (NTIS/PB83-200386)

Bacteria toxicity:

EC10: 1 000 mg/l (30 min) - OECD 209

12.2 Persistence and degradability

Biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: -0.24 (20 °C)

12.4 Mobility in soil:

no data available

12.5 Results of PBT/vPvB assessment

not applicable

12.6 Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to the environment.

12.7 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose according to local legislation. Consult the appropriate local waste disposal expert about waste disposal. Waste requires monitoring.

Waste code product: 070104

Appropriate disposal / Package

Dispose according to local legislation. Handle contaminated packages in the same way as the substance itself.

Additional information

no data available

SECTION 14: Transport information

Land transport (ADR/RID)

14.1	UN-No.:	1090
14.2	Proper Shipping Name:	ACETONE
14.3	Class(es):	3
	Classification code:	F1
	Hazard label(s):	3
14.4	Packing group:	II
14.5	Environmental hazards:	No
14.6	Special precautions for user:	
	Hazard identification number (Kemler No.):	33
	tunnel restriction code:	D/E
		(Passage forbidden through tunnels of category D when carried in bulk or in tanks. Passage forbidden through tunnels of category E.)

Sea transport (IMDG)

14.1	UN-No.:	1090
14.2	Proper Shipping Name:	ACETONE
14.3	Class(es):	3
	Classification code:	
	Hazard label(s):	3
14.4	Packing group:	II
14.5	Environmental hazards:	No
	Marine pollutant:	No
14.6	Special precautions for user:	
	Segregation group:	-
	EmS-No.	F-E S-D
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
	not relevant	

Air transport (ICAO-TI / IATA-DGR)

14.1	UN-No.:	1090
14.2	Proper Shipping Name:	ACETONE
14.3	Class(es):	3
	Classification code:	
	Hazard label(s):	3
14.4	Packing group:	II
14.5	Special precautions for user:	

SECTION 15: Regulatory information

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

National regulations

- Workplace Safety and Health Act
- Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order
- Environmental Protection and Management Act (EPMA) - Second Schedule, Part 1, Control of Hazardous Substances
- Maritime and Port Authority of Singapore (MPA) - Dangerous Goods, Petroleum and Explosives Regulations

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
 ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
 AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
 CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
 DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
 DNEL - Derived No Effect Level
 Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
 IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
 ICAO-TI - International Civil Aviation Organization-Technical Instructions
 IMDG - International Maritime Code for Dangerous Goods
 KOSHA - Korea Occupational Safety and Health Agency
 LTV - Long Term Value
 NIOSH - National Institute for Occupational Safety and Health
 OSHA - Occupational Safety & Health Administration
 PBT - Persistent, Bioaccumulative and Toxic
 PNEC - Predicted No Effect Concentration
 RID - Regulation concerning the International Carriage of Dangerous Goods by Rail
 STV - Short Term Value
 SVHC - Substances of Very High Concern
 vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

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Additional information

Indication of changes

Review and revision of Sections 4, 5, 6, 7 and 10.

If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.