

Material Safety Data Sheet

Date Printed: 16/DEC/2004

Date Updated: 17/MAY/2004

Version 1.8

According to 91/155/EEC

1 - Product and Company Information

Product Name	ACETONE, 99.9+%, CAPILLARY GC GRADE, SUITABLE FOR ENVIRONMENTAL ANALYSIS
Product Number	414689
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
ACETONE	67-64-1	200-662-2	606-001-00-8

Formula	C3H6O
Molecular Weight	58.08 AMU
Synonyms	Aceton (German, Dutch, Polish) * Acetone (ACGIH:OSHA) * Chevron acetone * Dimethylformaldehyde * Dimethylketal * Dimethyl ketone * Ketone, dimethyl * Ketone propane * beta-Ketopropane * Methyl ketone * Propanone * 2-Propanone * Pyroacetic acid * Pyroacetic ether * RCRA waste number U002

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water.

AFTER EYE CONTACT

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is

conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

GENERAL HYGIENE MEASURES

Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	600 MG/M3
Poland		NDSch	1800 MG/M3
Poland		NDSP	-

EXPOSURE LIMITS - EUROPEAN UNION

Source	Type	Value
OEL	OEL	1,210 mg/m3 500 ppm

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	600 mg/m3 250 ppm

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	1,200 mg/m3 500 ppm

Remarks: 4

EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	295 mg/m3 125 ppm

EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level)	600 mg/m3 250 ppm

EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	1,200 mg/m3 500 ppm

Remarks: M

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	1,810 mg/m3 750 ppm
OEL	STEL	3,620 mg/m3 1,500 ppm

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Clear liquid Color: Colorless	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	56 °C	760 mmHg
MP/MP Range	-94 °C	
Flash Point	-17 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	465 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 2 % Upper: 13 %	
Vapor Pressure	184 mmHg	20 °C

SG/Density	0.79 g/cm3	
Partition Coefficient	Log Kow: -0.24	
Viscosity	0.303 Pas	25 °C
Vapor Density	2 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	23.2 mN/m	20 °C
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:miscible Other Solvents: MISCIBLE WITH ALCOHOL, DMF CHLOROFORM, ETHER	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Bases, Oxidizing agents, Reducing agents

Acetone reacts violently with phosphorous oxychloride.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: AL3150000

ACUTE TOXICITY

LD50

Oral

Rat

5800 mg/kg

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Tremor.

LC50

Inhalation

Rat

50,100 mg/m3

8H

LD50

Intravenous

Rat

5500 MG/KG

LD50

Oral

Mouse

3000 mg/kg

LC50

Inhalation

Mouse

44,000 mg/m³

4H

LD50

Intraperitoneal

Mouse

1297 MG/KG

LD50

Oral

Rabbit

5340 mg/kg

LD50

Skin

Guinea pig

>9400 UL/KG

IRRITATION DATA

Eyes

Human

500 ppm

Skin

Rabbit

395 mg

Remarks: Open irritation test

Skin

Rabbit

500 mg

24H

Remarks: Mild irritation effect

Eyes

Rabbit

20 mg

Remarks: Severe irritation effect

Eyes

Rabbit

20 mg

24H

Remarks: Moderate irritation effect

SENSITIZATION

Sensitization: Causes dermatitis.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

TARGET ORGAN INFORMATION

Liver. Kidneys.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not

classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

CHRONIC EXPOSURE - MUTAGEN

Hamster
40 GM/L
Cell Type: fibroblast
Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 273 GM/KG
Route of Application: Oral
Exposure Time: (13W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Mammal
Dose: 31500 UG/M3/24H
Route of Application: Inhalation
Exposure Time: (1-13D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

12 - Ecological Information

ECOTOXICOLOGICAL EFFECTS

Test Type: LC50 Fish
Species: Onchorhynchus mykiss (Rainbow trout)
Time: 96 h
Value: 5,540 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 13,500 mg/l

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 1090
Class: 3
PG: II
Proper Shipping Name: Acetone

IMDG

UN#: 1090
Class: 3
PG: II
Proper Shipping Name: Acetone

Marine Pollutant: No
Severe Marine Pollutant: No

IATA

UN#: 1090
Class: 3
PG: II
Proper Shipping Name: Acetone
Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 606-001-00-8

NOTA: 6

INDICATION OF DANGER: F Xi

Highly Flammable. Irritant.

R-PHRASES: 11 36 66 67

Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.

S-PHRASES: 9 16 26

Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: 5

NORWAY

Labelling for organic solvents where the package is 1liter or more.

YL-tall m3/l: 3749

YL-group: 5

Risk phrases: 20

Harmful by inhalation.

Safety phrases: 38 42 210

In case of insufficient ventilation, wear suitable respiratory equipment. During fumigation/spraying wear suitable respiratory equipment. Use compressed air- or fresh air line breathing apparatus in confined spaces.

Declaration Number: 7390

16 - Other Information

WARRANTY

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited

paper copies for internal use only.

DISCLAIMER

For R&D use only. Not for drug, household or other uses.