

SAFETY DATA SHEET

Version 8.4
Revision Date 2025.11.07
Print Date 2025.11.08

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 4'-Hydroxyacetophenone

Product Number : 278564

Brand : Aldrich

1.2 Other means of identification

No data available

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

Identified uses : For R&D use only. Not for pharmaceutical, household or other uses.

1.4 Details of the supplier of the safety data sheet

Company :

MERCK LTD.
20F., No. 121, Jingmao 2nd Road, Nangang District, Taipei City
115, Taiwan

Merck KGaA
64271 Darmstadt
Germany
Phone: +49 6151 72-0

1.5 Emergency telephone number

Emergency Phone : +(44)-870-8200418 (CHEMTREC (GB))
Number : +(353)-19014670 (CHEMTREC Ireland)
001-803-017-9114 (CHEMTREC India)

2. HAZARDS IDENTIFICATION

GHS Classification

Aldrich- 278564

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The life science business of Merck operates as MilliporeSigma in the US and Canada

Acute toxicity (Oral) : Category 5
Serious eye damage/eye irritation : Category 2A
Short-term (acute) aquatic hazard : Category 3
Long-term (chronic) aquatic hazard : Category 3

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H303 May be harmful if swallowed.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.
Response:
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.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

CAS-No. : 99-93-4

Components

Hazardous ingredients	CAS-No.	Concentration (% w/w)
4'-hydroxyacetophenone	99-93-4	>= 90 -<= 100

4. FIRST AID MEASURES

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

First aid measures for different exposure routes

If inhaled : After inhalation: fresh air.

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.

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

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water
Foam
Carbon dioxide (CO₂)
Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting : Combustible.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

- Hazardous combustion products : Carbon oxides
- Specific extinguishing methods : Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:
Avoid inhalation of dusts.
Avoid substance contact.
Ensure adequate ventilation.
Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
For personal protection see section 8.
- Environmental precautions : Do not let product enter drains.
- 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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

7. HANDLING AND STORAGE

Handling

For precautions see section 2.2.

Storage

- Further information on storage conditions : Tightly closed.
Dry.
- Storage class : 11, Combustible Solids

Recommended storage temperature : Recommended storage temperature see product label.

Further information on storage stability : hygroscopic

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Biological occupational exposure limits

Contains no substances with biological exposure indices.

Engineering measures : No data available

Personal protective equipment

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Full contact
Manufacturer : KCL 741 Dermatril® L

Material : Nitrile rubber
Break through time : 480 min
Glove thickness : 0.11 mm
Protective index : Splash contact
Manufacturer : KCL 741 Dermatril® L

Remarks : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating

from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

- Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Safety glasses
- Skin and body protection : protective clothing
- Hygiene measures : Change contaminated clothing. Wash hands after working with substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : solid
- Color : No data available
- Odor : No data available
- Odor Threshold : No data available
pH : No data available
- Melting point/ range : 109 - 111 °C
Method: lit.
- Boiling point/boiling range : 147 - 148 °C (4 hPa)
Method: lit.
- Flash point : 166 °C
- Evaporation rate : No data available
- Burning rate : No data available
- Upper explosion limit /
Upper flammability limit : No data available
- Lower explosion limit /
Lower flammability limit : No data available
- Vapor pressure : < 0.1 hPa (20 °C)
Method: OECD Test Guideline 104
GLP: yes
- Relative vapour density : No data available

Relative density	:	No data available
Density	:	1.27 g/cm ³ (20 °C) Method: OECD Test Guideline 109 GLP: yes
Solubility(ies)		
Water solubility	:	10 g/l soluble (22 °C)
Partition coefficient: n-octanol/water	:	log Pow: 1.35 (25 °C) Method: (calculated) Bioaccumulation is not expected.
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Explosive properties	:	Not classified as explosive.
Oxidizing properties	:	none
Molecular weight	:	136.15 g/mol
Particle characteristics		
Particle size	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
Chemical stability	:	The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	:	Violent reactions possible with: Strong oxidizing agents

Acids and bases
Acid chlorides
Acid anhydrides

Conditions to avoid : Avoid moisture.
Strong heating.

Incompatible materials : No data available

Hazardous decomposition products : In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 2,240 mg/kg
(US-EPA)

Inhalation: No data available

LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg
(US-EPA)

Skin corrosion/irritation

Skin - Rabbit

Result: No irritation
(US-EPA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: irritating
(US-EPA)

Eyes - Rabbit

Result: Irritating to eyes.

Respiratory or skin sensitization

Sensitisation test: - Guinea pig

Result: negative
(US-EPA)

Germ cell mutagenicity

Test Type: unscheduled DNA synthesis assay

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: US-EPA

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Intraperitoneal
Method: US-EPA

Test Type: Micronucleus test
Species: Mouse

Application Route: Intraperitoneal

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 90 d - No observed adverse effect level - 45 mg/kg
Remarks: Subchronic toxicity

Repeated dose toxicity - Rat - male and female - Oral - 28 h - No observed adverse effect level - 600 mg/kg
Remarks: Subacute toxicity

RTECS: AM8750000

Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue.

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

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Handle in accordance with good industrial hygiene and safety practice.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

4'-hydroxyacetophenone:

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Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 25 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: US-EPA GLP: yes
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 50 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: US-EPA GLP: yes
	Remarks: (Hommel)
Toxicity to algae/aquatic plants	: ErC50 (Pseudokirchneriella subcapitata (green algae)): 11.8 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: US-EPA GLP: yes
	NOEC (Pseudokirchneriella subcapitata (green algae)): 2.8 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: US-EPA GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 1 mg/l Exposure time: 21 d Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes
Toxicity to microorganisms	: EC20 (activated sludge): 130 mg/l Exposure time: 3 h Test Type: static test Method: OECD Test Guideline 209 GLP: yes

Persistence and degradability

Components:

4'-hydroxyacetophenone:

Biodegradability	: aerobic Inoculum: activated sludge Concentration: 20 mg/l
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Result: Readily biodegradable.
Biodegradation: 93.2 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

Bioaccumulative potential

Components:

4'-hydroxyacetophenone:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 1.35 (25 °C)
Method: (calculated)
Remarks: Bioaccumulation is not expected.

Mobility in soil

Components:

4'-hydroxyacetophenone:

Stability in soil : Remarks: No data available

Other adverse effects

Components:

4'-hydroxyacetophenone:

Additional ecological information : No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : 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.

The chemical must be disposed or recycled in accordance with Waste Disposal Act. See www.epa.gov.tw for the information of chemical waste disposal companies and their contacts.

14. TRANSPORT INFORMATION

International Regulations

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IATA-DGR

Not regulated as a dangerous good

UN/ID No. : Not applicable
 Proper shipping name : Not applicable
 Class : Not applicable
 Subsidiary risk : Not applicable
 Packing group : Not applicable
 Labels : Not applicable
 Packing instruction (cargo aircraft) : Not applicable
 Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

Not regulated as a dangerous good

UN number : Not applicable
 Proper shipping name : Not applicable
 Class : Not applicable
 Subsidiary risk : Not applicable
 Packing group : Not applicable
 Labels : Not applicable
 EmS Code : Not applicable
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION**National regulatory information**

Occupational Safety and Health Act; Regulations on Occupational Safety and Health Facilities : applicable
 Waste Disposal Act; Standards for the Storage, Cleanup, Handling and Disposal of Industrial Waste : applicable
 Regulations on Labelling and Hazard Communication of Hazardous Chemicals; Exposure Assessment and Control Banding of Hazardous Chemicals : applicable
 Rules on Road Traffic Safety : Not applicable
 Standards of Permissible Exposure Limits in Workplace : Contains no substances with occupational exposure limit values.
 Rules on the Prevention of Poisoning from Organic Solvents. : Not applicable
 Standard for the Control of Designated Hazardous and Dangerous Chemicals : Not applicable
 Standards for Establishing Places for Manufacturing : Not applicable

turing, Storing, Processing Public Hazardous Substances and Flammable Pressurized Gases, and Regulations on Safety Control of such Places

Toxic and Concerned Chemical Substances Control Act

Toxic chemical substances	:	Not applicable
Concerned chemical substances	:	Not applicable
Regulations for Governing Designating and Handling of Priority Management Chemicals	:	Not applicable
Rules on Labour Health Protection	:	Not applicable

16. OTHER INFORMATION

Further information

Literature references : About detail information, please refer to each section
The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

Organization that prepared the SDS : Name:Merck KGaA LS-QH
Address/Telephone number:64271 Darmstadt Germany/+49 6151 72-0

Date that the SDS was prepared : 2025.11.07

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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.
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Date format : yyyy/mm/dd

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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