CATO Research Chemicals Inc.
3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Web: www.cato-chem.com
Tel: +86-20-81960175 Fax: +86-20-81717260 E-mail: info@cato-chem.com

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Acetophenone

### 1.2 Other means of identification

**Product number** CCEM500434
**Other names** Ethanone,1-phenyl; Phenyl methyl ketone; Acetophenon

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** For laboratory and Industrial use only.
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** CATO Research Chemicals Inc.
**Address** 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
**Telephone** +86-20-81960175

### 1.5 Emergency phone number

**Emergency phone number** +86-20-81960175
**Service hours** 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Eye irritation, Category 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Warning
**Hazard statement(s)** H302 Harmful if swallowed
H319 Causes serious eye irritation
**Precautionary statement(s)**
**Prevention** P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
**Response** P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
**Storage** none
**Disposal** P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### 2.3 Other hazards which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---|---|---|---|---|
| Acetophenone | Acetophenone | 98-86-2 | 202-708-7 | 100% |

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

**If inhaled**

Fresh air, rest. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower.

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth. Refer for medical attention .

### 4.2 Most important symptoms/effects, acute and delayed

No toxicity expected from inhalation or ingestion except slight narcotic effect. Liquid can cause eye and skin irritation on contact. (USCG, 1999)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Call for medical aid. ... Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open, and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water, or milk.

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Extinguish with water, foam, dry chemical, carbon dioxide.

### 5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 128 [Flammable Liquids (Water-Immiscible)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. Substance may be transported hot. For hybrid vehicles, ERG Guide 147 (lithium ion batteries) or ERG Guide 138 (sodium batteries) should also be consulted. If molten aluminum is involved, refer to ERG Guide 169. (ERG, 2016)

### 5.3 Special protective actions for fire-fighters

Use alcohol-resistant foam, powder, carbon dioxide.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### 6.2 Environmental precautions

Personal protection: filter respirator for organic gases and particulates adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### 6.3 Methods and materials for containment and cleaning up

Absorb on paper. Evaporate on a glass or iron dish in hood. Burn the paper.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames. Above 77°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants. Ventilation along the floor.In general materials... toxic as stored or which can decompose into toxic components... should be stored in cool... ventilated place, out of... sun, away from... fire hazard... be periodically inspected and monitored. Incompatible materials should be isolated.

## SECTION 8: Exposure controls/personal protection

## 8.1 Control parameters

**Occupational Exposure limit values**

TLV: 10 ppm as TWA

**Biological limit values**

no data available

## 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## 8.3 Individual protection measures, such as personal protective equipment (PPE)

**Eye/face protection**

Wear safety spectacles.

**Skin protection**

Protective gloves.

**Respiratory protection**

Use ventilation, local exhaust or breathing protection.

**Thermal hazards**

no data available

# SECTION 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| **Physical state** | Liquid. |
| **Colour** | Acetophenone is a colorless liquid. |
| **Odour** | SWEET, PUNGENT ODOR OF ACACIA |
| **Melting point/freezing point** | 20 °C. |
| **Boiling point or initial boiling point and boiling range** | 202.11°C. Atm. press.:1 013.25 hPa. |
| **Flammability** | Combustible. |
| **Lower and upper explosion limit/flammability limit** | no data available |
| **Flash point** | 105 °C.;221 °F. |
| **Auto-ignition temperature** | 535 °C. Atm. press.:1 013 hPa. |
| **Decomposition temperature** | no data available |
| **pH** | no data available |
| **Kinematic viscosity** | dynamic viscosity (in mPa s) = 1.681. Temperature:25.0°C.;dynamic viscosity (in mPa s) = 0.634. Temperature:100.0°C. |
| **Solubility** | Slightly sol in concn sulfuric acid; freely sol in alc, chloroform, ether, fatty oils, glycerol. |
| **Partition coefficient n-octanol/water** | log Pow = Ca. 1.63 - ca. 1.65. Remarks:Temperature: unknown. |
| **Vapour pressure** | 45 Pa. Temperature:25 °C.;0.45 hPa. Temperature:25 °C. |
| **Density and/or relative density** | 1.03 g/cm³. Temperature:20 °C. |
| **Relative vapour density** | 4.1 (Air=1) |
| **Particle characteristics** | no data available |

# SECTION 10: Stability and reactivity

## 10.1 Reactivity

Slightly soluble in water.

## 10.2 Chemical stability

Stable under normal laboratory storage conditions.

## 10.3 Possibility of hazardous reactions

It/ does not form flammable mixtures with air at room temperature.ACETOPHENONE reacts with many acids and bases liberating heat and flammable gases (e.g., H2). Reacts with many oxidizing agents. Reacts with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H2) and heat. The amount of heat in these reactions may be sufficient to start a fire in the unreacted portion. Incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides.

## 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

## SECTION 11: Toxicological information

**Acute toxicity**

- Oral: LD50 - rat (male/female) - 2 081 mg/kg bw.
- Inhalation: no data available
- Dermal: LD50 - rat (male/female) - 3 300 mg/kg bw.

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

Cancer Classification: Group D Not Classifiable as to Human Carcinogenicity

**Reproductive toxicity**

No information is available on the reproductive or developmental effects of acetophenone in humans. In one study of pregnant rats exposed dermally, no effects on reproduction or development were noted.

**STOT-single exposure**

The substance is irritating to the eyes. The substance may cause effects on the central nervous system.

**STOT-repeated exposure**

The substance defats the skin, which may cause dryness or cracking.

**Aspiration hazard**

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

## SECTION 12: Ecological information

### 12.1 Toxicity

- Toxicity to fish: LC50 - Pimephales promelas - 162 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - Daphnia magna - 528 mg/L - 48 h.
- Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 40 mg/L - 72 h.
- Toxicity to microorganisms: IC50 - activated sludge - > 1 000 mg/L - 3 h. Remarks:Respiration rate.

### 12.2 Persistence and degradability

Acetophenone, present at 100 mg/l, achieved 61-68% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(1). Other screening studies give similar results and acetophenone is confirmed to be biodegradable(2-4). Acetophenone achieved 20-32% of its theoretical BOD using a sewage inoculum over a 5 day incubation period(2,3). Acetophenone reached 59% of its theoretical BOD using acclimated mixed microbial cultures and a 5 day incubation period(4). The biodegradation half-lives of acetophenone in groundwater, river water and lake water were 32, 8 and 4.5 days, respectively(5,6).

### 12.3 Bioaccumulative potential

An estimated BCF of 0.5 was calculated for acetophenone(SRC), using a log Kow of 1.58(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

### 12.4 Mobility in soil

The Koc of acetophenone was measured as 10, using an agricultural soil obtained from Northeastern China(1). According to a classification scheme(2), this Koc value suggests that acetophenone is expected to have very high mobility in soil(SRC).

### 12.5 Other adverse effects

no data available

## SECTION 13: Disposal considerations

### 13.1 Disposal methods

**Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

**Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

### 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name | Common names and synonyms | CAS number | EC number |
|---|---|---|---|
| Acetophenone | Acetophenone | 98-86-2 | 202-708-7 |
| **European Inventory of Existing Commercial Chemical Substances (EINECS)** | | | Listed. |
| **EC Inventory** | | | Listed. |
| **United States Toxic Substances Control Act (TSCA) Inventory** | | | Listed. |
| **China Catalog of Hazardous chemicals 2015** | | | Not Listed. |
| **New Zealand Inventory of Chemicals (NZIoC)** | | | Listed. |
| **Philippines Inventory of Chemicals and Chemical Substances (PICCS)** | | | Listed. |
| **Vietnam National Chemical Inventory** | | | Listed. |
| **Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)** | | | Listed. |
| **Korea Existing Chemicals List (KECL)** | | | Listed. |

## SECTION 16: Other information

**Information on revision**

| | |
|---|---|
| **Creation Date** | July 15, 2019 |
| **Revision Date** | August 08, 2025 |

**Abbreviations and acronyms**

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average

- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

**References**


- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/


**Other Information**

Use of alcoholic beverages enhances the harmful effect.

**Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com**

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*Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*