

According to the UN GHS revision 8

Creation Date: August 12, 2024

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1. IDENTIFICATION

1.1 GHS Product identifier

Product name: Acetaminophen

Catalog Number: T0065

CAS Number: 103-90-2

1.2 Other means of identification

Other names: -

1.3 Recommended use of the chemical and restrictions on use

Identified uses:

1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Uses advised against: 36 Washington Street, Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone: UTC/GMT -5hours).

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

2.2 GHS label elements, including precautionary statements

Pictogram(s):



Signal word: Warning

Hazard statement(s): H302 Harmful if swallowed

Precautionary statement(s):

Prevention:

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Response:

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number
Acetaminophen	-	103-90-2	203-157-5

4. FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

General advice

no data available

If inhaled

Fresh air, rest.

Following skin contact

Rinse and then wash skin with water and soap.

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible).

Following ingestion

Give one or two glasses of water to drink.

4.2 Most important symptoms/effects, acute and delayed

Emergency and supportive measures. Spontaneous vomiting may delay the oral administration of antidote or charcoal and can be treated with metoclopramide or a serotonin receptor antagonist such as ondansetron. Provide general supportive care for hepatic or renal failure if it occurs. Emergency liver transplant may be necessary for fulminant hepatic failure. Encephalopathy, metabolic acidosis, hypoglycemia, and a progressive rise in the prothrombin time are indications of severe liver injury.

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

SYMPTOMS: Symptoms of overexposure to this compound include nausea, vomiting, cyanosis from methemoglobinemia, injury to the liver, kidneys, central nervous system and heart, circulatory collapse, drowsiness, confusion, liver tenderness, low blood pressure, cardiac arrhythmias, jaundice, acute renal failure, death due to liver necrosis, metabolic acidosis, hepatic damage and cirrhosis. Other symptoms include changes in exocrine pancreas, diarrhea, irritability, somnolence, general anesthesia, fever and hepatitis. Diaphoresis and general malaise may occur. Exposure may lead to hematological reactions and, occasionally, skin rashes and other allergic reactions. The rash is usually erythematous or urticarial, but sometimes it is more serious and may be accompanied by drug fever and mucosal lesions. Exposure to large amounts may lead to pallor, anorexia, abdominal pain, abnormalities of glucose metabolism and hepatic encephalopathy. It may also lead to epigastric pain, sweating, paresthesias of distal extremities, muscular aching, weakness, dizziness, central nervous system depression (rare), pain in the upper right quadrant, enlarged liver, oliguria, anuria, coagulation defects and myocardopathy characterized by ST segment abnormalities, T-wave flattening and pericarditis. This compound can cause purpura, generalized bleeding and hypoglycemia. It can also cause neutropenia, pancytopenia, leukopenia, thrombocytopenia and nephrotoxicity. Other symptoms may include wheezing, general discomfort, blood changes including many anemias (aplastic anemia), central nervous system stimulation, swollen tongue, rapid pulse, skin eruptions, chills, excitement, delirium, vascular collapse and convulsions. Irritation of the skin, eyes, mucous membranes and upper respiratory tract may occur. **ACUTE/CHRONIC HAZARDS:** This compound may be harmful by ingestion and inhalation. It may cause irritation of the skin, eyes, mucous membranes and upper respiratory tract. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. (NTP, 1992)

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Special protective equipment for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

5.2 Specific hazards arising from the chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use powder, alcohol-resistant foam, water spray, carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Do NOT let this chemical enter the environment.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Do NOT let this chemical enter the environment.

6.3 Methods and materials for containment and cleaning up

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

NO open flames. 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

Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access. Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

Biological limit values

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 goggles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid. Crystalline.
Color	Colourless.
Odour	Odorless
Melting point/ freezing point	165.5 °C. Atm. press.:966 hPa. Remarks:Other details not available.

Boilingpoint or initial boiling point and boiling range	273 °C. Atm. press.:966 hPa. Remarks:Other details not available.
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	no data available
Flash point	177 °C. Atm. press.:966 hPa.
Auto-ignition temperature	Atm. press.:966 hPa. Remarks:Paracetamol did not catch fire on being exposed to air at room temperature of 26 degC.
Decomposition temperature	no data available
pH	4.23. Remarks:Relatively acidic.
Kinematic viscosity	no data available
Solubility	DMSO: 60 mg/mL (396.93 mM), H2O: 20 mg/mL (132.3 mM),Sonication is recommended. Ethanol: 15.1 mg/mL (100 mM),
N-octanol-water partition coefficient	log Pow = 0.46. Temperature:25 °C. Remarks:PH not available.
Vapour pressure	0.008 Pa. Temperature:25 °C.
Density and/ or relative density	0.679 g/cm ³ . Temperature:26 °C.
Relative vapour density	(air = 1): 5.2
Particle characteristics	no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Slightly soluble in water.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Not flammable or combustible.4-HYDROXYACETANILIDE is sensitive to light. Incompatible with strong oxidizers. (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD50 - mouse (female) - 338 mg/kg bw.

Inhalation: LC50 - mouse - 33 900 mg/m³ air.

Dermal: no data available

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

Evaluation: There is inadequate evidence in humans for the carcinogenicity of paracetamol. There is inadequate evidence in experimental animals for the carcinogenicity of paracetamol. Overall evaluation: Paracetamol is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

Ingestion may cause effects on the kidneys and liver. This may result in impaired functions.

Aspiration hazard

A nuisance-causing concentration of airborne particles can be reached quickly.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC50 - Pimephales promelas - 814 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia pulex - 136 mg/L - 24 h.

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 134 mg/L - 72 h.

Toxicity to microorganisms: IGC50 - Tetrahymena pyriformis - 999 mg/L - 48 h.

12.2 Persistence and degradability

AEROBIC: Acetaminophen has been categorized as readily biodegradable following acclimation(1). A half-life of 20 days has been reported for acetaminophen using an activated sludge inoculum(2). Half-lives of 40 and 17 days were observed when using activated sludge inoculums acclimated to phenol(3) and cresol(4), respectively. Acetaminophen reached 94% of its theoretical BOD in 6 days using an activated sludge inoculum and the Zahn-Wellens test(5). The rate constants for non-adapted, phenol-adapted, and cresol-adapted activated sludge (sludge concentrations of 500, 10, and 50 mg/L) were 0.141×10^{-2} , 0.713×10^{-3} , and 0.215×10^{-2} 1/hr, respectively(6); half-lives are 21, 40, and 13 days, respectively(SRC). Acetaminophen, present at 100 ug/L, exhibited biodegradation rates of 0.014/hr and 0.00051/hr in 5 days using Tamlya and Tsumeta River water (Japan), respectively, and the OECD 301-A river die-away test. The corresponding half-lives are 50 and 1400 hours, respectively(7).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for acetaminophen(SRC), using a log Kow of 0.46(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 acetaminophen is estimated as 21(SRC), using a log Kow of 0.46(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that acetaminophen is expected to have very high mobility in soil. The pKa of acetaminophen is 9.38(4), indicating that this compound will exist partially in the anion form in the environment and anions generally adsorb less strongly to soils containing organic carbon and clay than their neutral counterparts(5). However, low mobility was observed in soils with a high organic content. Kd values of 46 and 36 in clayey silt and silty sand, respectively, have been reported when the test compound was applied in standard dilution(6). Kd values of 45 and 41 in clayey silt and silty sand, respectively, have been reported when acetaminophen was applied as a test sludge; the average Kd value of 42 indicated low mobility(6). Acetaminophen, present at <0.009 ug/L, was not detected in leachate water (treated effluent from a municipal wastewater treatment facility) following a 23-day soil column leaching experiment using Mohall-Laveen sandy loam (detection limit = 0.009 ug/L)(7).

12.5 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

A DRUG SCREENING EXPERT

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.

14. TRANSPORT INFORMATION

14.1 UN Number

no data available

14.2 UN Proper Shipping Name

no data available

14.3 Transport hazard class(es)

no data available

14.4 Packing group, if applicable

no data available

14.5 Environmental hazards

no data available

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

15. REGULATORY INFORMATION

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

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.

16. OTHER INFORMATION

Information on revision

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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

no data available

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