Chemical Safety Data Sheet MSDS / SDS

O-acetylsalicylic acid SDS

Revision Date:2024-04-25 Revision Number:1

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

Product identifier

Product name: O-acetylsalicylic acid

CAS: 50-78-2

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral

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.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	O-acetylsalicylic acid
Common names and synonyms:	O-acetylsalicylic acid

CAS number:	50-78-2
EC number:	200-064-1
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Rinse skin with plenty of water or shower. Refer for medical attention .

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 .

Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin, upper respiratory system; increased blood clotting time; nausea, vomiting; liver, kidney injury Target Organs: (NIOSH, 2016)

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

The use of paralytic agents and difficulty in achieving the very high minute volumes needed tend to induce respiratory acidosis in the patient. Aspirin (pKa = 3.5) becomes non-ionized at an acidic pH and crosses the blood-brain barrier more readily, increasing its toxic central effects. It is the tissue rather than plasma levels that are dangerous to the patient. Noncardiogenic pulmonary edema interferes with oxygenation of the patient and high concentrations of inspired oxygen may be required.

SECTION 5: Firefighting measures

Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used. (NTP, 1992)

Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

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. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Personal protection: particulate filter respirator adapted to the airborne concentration of the substance.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. 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.

Conditions for safe storage, including any incompatibilities

Well closed.Chewable aspirin tablets containing 81 mg of the drug should be stored in child-resistant containers holding not more than 36 tablets each in order to limit the potential toxicity associated with accidental ingestion in children. Aspirin suppositories should be stored at 2-15 deg C.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 5 mg/m3, as TWA

Biological limit values

no data available

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.

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

Eye/face protection

Wear safety goggles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation (not if powder).

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Solid. Crystalline.
Colour:	White.
Odour:	Odorless, but in moist air it is gradually hydrolyzed and acquires odor of acetic acid
Melting point/freezing point:	136 °C. Atm. press.: 1 atm.
Boiling point or initial boiling point and boiling range:	120°C
Flammability:	Combustible Powder; explosion hazard if dispersed in air.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	250 °C. Atm. press.: 1 atm.
Auto-ignition temperature:	Remarks: The substance melts before reaching its minimal inflammation temperature as layer.
Decomposition temperature:	140°C
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 73° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 1.19. Temperature: 20 °C.
Vapour pressure:	0 mm Hg. Temperature: 25 °C. Remarks: Equals 0.0034 Pa.
Density and/or relative density:	1 350 kg/m3. Temperature: 20 °C.; 700 kg/m3. Temperature: 20 °C.
Relative vapour density:	no data available

Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The solution in water is a weak acid.

Chemical stability

Stable in dry air; in moist air it is gradually hydrolyzed into salicylic and acetic acids

Possibility of hazardous reactions

SLIGHT WHEN EXPOSED TO HEAT OR FLAMEDust explosion possible if in powder or granular form, mixed with air.The active ingredient in common aspirin. Incompatible with oxidizers and strong acids. Also incompatible with strong bases. May react with water or nucleophiles (e.g. amines and hydroxy groups). May also react with acetanilide, amidopyrine, phenazone, hexamine, iron salts, phenobarbitone sodium, quinine salts, potassium and sodium iodides, alkali hydroxides, carbonates, stearates and paracetanol. (NTP, 1992)

Conditions to avoid

no data available

Incompatible materials

Solutions of alkali hydroxides or carbonates, strong oxidizers, moisture [Note: Slowly hydrolyzes in moist air to salicyclic & acetic acids].

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male) - ca. 1 850 mg/kg bw.

Inhalation: no data available

Dermal: LD50 - rabbit - > 7 940.

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

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. Ingestion of large amounts could cause effects on the blood and central nervous system.

STOT-repeated exposure

Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Leuciscus idus - > 1 000 mg/L - 48 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 1 293 mg/L - 48 h. Remarks:Acetylsalicylic acid.

Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - 106.7 mg/L - 72 h.

Toxicity to microorganisms: EC50 - Bacillus subtilis - 360 mg/L - 1 h.

Persistence and degradability

AEROBIC: No biodegradation studies were located for acetylsalicylic acid in soil or natural water(SRC, 2008); however, acetylsalicylic acid was classified as readily biodegradable in screening tests using sewage sludge inoculum(1,2). Conversely, only a 0.09% total biodegradation was predicted in a study of a UK sewage treatment plant; the compound is detected in the UK environment(3).

Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for acetylsalicylic acid (SRC), using a log Kow of 1.19(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).

Mobility in soil

The Koc of acetylsalicylic acid is estimated as 100(SRC), using a log Kow of 1.19(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that acetylsalicylic acid is expected to have high mobility in soil(SRC). The pKa of acetylsalicylic acid is estimated as 3.49(4), indicating that this compound will primarily exist as an anion in the environment and anions generally do not adsorb as strongly to soils containing organic carbon and clay than their neutral counterparts(5).

Other adverse effects

no data available

SECTION 13: Disposal considerations

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

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.)

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.)

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.)

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.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

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/

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