Chemical Safety Data Sheet MSDS / SDS

Diazepam 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: Diazepam

CAS: 439-14-5

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 3, Oral
Acute toxicity - Category 3, Dermal

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H301+H311 Toxic if swallowed or in contact with skin

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+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

Storage

P405 Store locked up.

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:	Diazepam
Common names and synonyms:	Diazepam
CAS number:	439-14-5
EC number:	207-122-5
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include drowsiness, ataxia, skin rash, dysarthria, nausea, diplopia, anxiety, depression, constipation, changes in salivation, blurred vision, urinary retention, incontinence, tremor, headache, confusion, slurred speech, vertigo, changes in libido and jaundice. Other symptoms of exposure include fatigue, dizziness, respiratory depression, nystagmus, incoordination of the upper extremities, cardiac arrest, hyporeflexia, muscular weakness, agitation, insomnia, grand mal seizures, organic brain syndrome, paradoxical excitement, delirium, coma, hallucinations, vomiting, lethargy and respiratory failure or arrest. It can cause tinnitus, excitability, rage reaction, phlebitis and lactic acidosis. It can also

cause central nervous depression, brown discoloration of the lenses, lightheadedness, amnesia, mental depression, blood disorders, dysphoria, slight wheezing, cyanosis, increased respiratory rate, abnormal blood gases, convulsions, increase in chromosomal aberrations, aplastic anemia, leukopenia, leukocytosis, encephalopathy, bilateral gynecomastia, allergic conjunctivitis, angle closure glaucoma, reduction of cardiac output and stroke volume, increase in heart rate and peripheral resistance, cholestasis, disorganization of thought, depressed pupillary response, inhibited performance recall, improved recall of information, reduced reaction time, apprehension, vascular disease, bronchopneumonia, bullous and vesicular skin eruptions, eccrine sweat gland and sweat duct necrosis, skin pallor and death. Exposure can cause decreased blood pressure, increase in hostility and irritability, and vivid or disturbing dreams. Exposure can also lead to hypotension, increased muscle spasticity, sleep disturbances, stimulation, neutropenia, hypoactivity, syncope, bradycardia, urticaria, cardiovascular collapse and hiccups. Damage to the eyes, central nervous system and pulmonary tract may occur. It may also cause dryness of the mouth, aggressive behavior, blood dyscrasias and hepatic dysfunction. If exposure occurs during pregnancy, it may cause lethargy and hypotonia in the offspring. The neonate may also experience apneic attacks. Symptoms may include hypertonia, hyperreflexis, difficulty in sucking, hypothermia and midline cleft deformities of the lip and palate. Depressed central nervous system function may also occur in the neonate. ACUTE/CHRONIC HAZARDS: When heated to decomposition this compound emits very toxic fumes of chlorine and nitrogen oxides. (NTP, 1992)

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

Emergency and supportive measures; 1. Protect the airway and assist ventilation if necessary. 2. Treat coma, hypotension, and hypothermia if they occur. Hypotension usually respond promptly to supine position and intravenous fluids /Benzodiazepines/.

SECTION 5: Firefighting measures

Suitable extinguishing media

Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials. ... As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

Specific hazards arising from the chemical

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

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriately labeled container for disposal. Wash spill site.

SECTION 7: Handling and storage

Precautions for safe handling

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

Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	PHYSICAL DESCRIPTION: Off-white to yellow crystalline powder. Practically odorless. Tasteless at first with a bitter aftertaste. (NTP, 1992)
Colour:	Colorless to light yellow crysytals
Odour:	Practically no odor
Melting point/freezing point:	131.5-134.5°C
Boiling point or initial boiling point and boiling range:	497.4°C at 760mmHg
Flammability:	no data available

Lower and upper explosion limit/flammability limit:	no data available
Flash point:	254.6°C
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 68° F (NTP, 1992)
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	4.98E-10mmHg at 25°C
Density and/or relative density:	1.26g/cm3
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Hydrolysis occurs in aqueous solutions with a maximum stability around pH 5. (NTP, 1992). Insoluble in water.

Chemical stability

no data available

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Incompatible materials

A significant interaction exists between diazepam and infusion fluid containers constructed of pvc plastics, due to absorption of diazepam into the pvc matrix.

Hazardous decomposition products

When heated to decomp it emits very toxic fumes of hydrogen chloride and NO(x)

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 710 mg/kg

Inhalation: no data available

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 evidence suggesting a lack of carcinogenicity of diazepam to the breast and inadequate evidence for carcinogenicity at other sites in humans. There is inadequate evidence in experimental animals for the carcinogenicity of diazepam. Overall Evaluation: Diazepam is not classifiable as to its carcinogenicity in humans (Group 3).

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water flea, <24 hr neonate); Conditions: freshwater, static, 21 deg C, pH 7.6; Concentration: 0.015 mM for 24 hr; Effect: increased intoxication, immobilization

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: 14C-Labeled diazepam exhibited a biodegradation half-life of greater than 365 days when incubated using water/sediment sample from the Wickerbach creek in Floersheim, Germany; less than 2% mineralization and 60% sorption to

sediment was observed, indicating high persistence(1). The removal rate of diazepam in 3 of 6 Italian sewage treatment plants (Naples, Latina, and Cuneo) sampled in 2004 was generally less than 40%; one plant (Varese Lago) reported 64% removal rate; two plants (Varese Olona and Cagliari) reported 0% removal(2).

Bioaccumulative potential

An estimated BCF of 33 was calculated in fish for diazepam(SRC), using log Kow of 2.82(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate(SRC).

Mobility in soil

Using river sediments from the Burgan and Dausenau Rivers in Germany, the log Koc of diazepam was shown to be 2.4 (Kd 1.9) and 2.8 (Kd 24.8), respectively(1), corresponding to respective Koc values of 251 and 630(SRC). A Koc of 192 (Kd 3.0) was reported using sediment sample from the Wickerbach creek in Floersheim, Germany(2). According to a classification scheme(3), these Koc values suggest that diazepam is expected to have moderate to low mobility in soil. Mobility studies using a clayey silt soil and a silty sand soil typical of German agricultural soils indicated a Kd range of 4 to 20(4).

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: UN2811 (For reference only, please check.)
IMDG: UN2811 (For reference only, please check.)
IATA: UN2811 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)
IMDG: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)
IATA: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (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)

Not Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC)

Not 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/