ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Carbamazepine

Revision Date:2025-07-26 Revision Number:1

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

Product identifier

Product name	: Carbamazepine
CBnumber	: CB1143564
CAS	: 298-46-4
EINECS Number	: 206-062-7
Synonyms	: Carbamazepine,carbamazepin

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
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Skin sensitization, Category 1

Respiratory sensitization, Category 1

Label elements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H225 Highly Flammable liquid and vapour

H302 Harmful if swallowed

H317 May cause an allergic skin reaction

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H370 Causes damage to organs

H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P264 Wash skin thouroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

P311 Call a POISON CENTER or doctor/physician.

P314 Get medical advice/attention if you feel unwell.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P342+P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

P501 Dispose of contents/container to.....

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P284 [In case of inadequate ventilation] wear respiratory protection.

Response

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P333+P317 If skin irritation or rash occurs: Get medical help.

P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P316 If experiencing respiratory symptoms: Get emergency medical help immediately.

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

no data available

SECTION 3: Composition/information on ingredients

Substance

Product name	: Carbamazepine
Synonyms	: Carbamazepine,carbamazepin
CAS	: 298-46-4
EC number	: 206-062-7
MF	: C15H12N2O
MW	: 236.27

SECTION 4: First aid measures

Description of 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 and effects, both acute and delayed

no data available

Indication of any immediate medical attention and special treatment needed

Emergency and supportive measures. Maintain an open airway and assist ventilation if necessary. Administer supplemental oxygen. Treat seizures, coma, hyperthermia, arrhythmias, hyponatremia, and dystonias if they occur. Asymptomatic patients should be observed for a minimum of 6 hours after ingestion and for at least 12 hours if an extended-release preparation was ingested. ...

SECTION 5: Firefighting measures

Extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

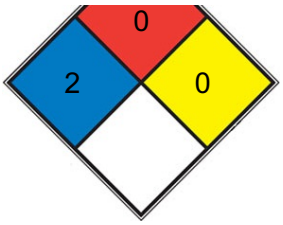
Specific Hazards Arising from the Chemical

no data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

NFPA 704



■	HEALTH	2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. diethyl ether, ammonium phosphate, iodine)
■	FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)
■	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,N2)
□	SPEC. HAZ.		

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

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

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

Carbamazepine tablets, extended-release tablets, and chewable tablets should be stored in tight, light-resistant containers at temperatures not exceeding 30 deg C. Carbamazepine extended-release capsules should be stored in tight, light-resistant containers at 15-25 deg C. Because dissolution characteristics and associated oral bioavailability of carbamazepine tablets may be affected substantially by moisture, patients should be cautioned to keep containers of the tablets tightly closed and in a dry location, away from areas with excessive moisture (e.g., showers, bathrooms, humidifiers). Carbamazepine tablets may lose one-third or more of their oral bioavailability when exposed to

excessive moisture. Tablets continuously exposed to 97% relative humidity at room temperature for 2 weeks become hardened and dissolve poorly.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Exposure 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

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

Information on basic physicochemical properties

Physical state	Crystals
Colour	Almost white
Odour	no data available
Melting point/freezing point	180°C(lit.)
Boiling point or initial boiling point and boiling range	189°C/12mmHg(lit.)
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	77°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available

pH	no data available
Kinematic viscosity	no data available
Solubility	45% (w/v) aq 2-hydroxypropyl-β-cyclodextrin: soluble29mg/mL
Partition coefficient n-octanol/water	no data available
Vapour pressure	5.78E-07mmHg at 25°C
Density and/or relative density	1.266g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

no data available

Chemical stability

To study the photostability of carbamazepine polymorphs, the pure materials on the tablet surface were evaluated without physical damage by means of Fourier-transform infrared reflection-absorption infrared spectrometry (FT-IR-RAS) and colorimetric measurement of the carbamazepine polymorphs I, II, and III, after photodegradation at 2 irradiation intensities under a near-UV fluorescent lamp. The surface of sample pellets of all crystalline forms turned gradually from white to yellow-orange upon exposure to light, and the discoloration rate of form II was faster than that of forms I and III, indicating that form II was the most unstable of the three. The semilogarithmic plots of the photodegradation profiles of the various polymorphs were straight lines, including the induction period, indicating that degradation of the drug on the surface followed first-order kinetics. The induction periods of all forms were not significantly different. However, the degradation rate constant of form II was 5.1 and 1.5 times larger than those of forms I and III, respectively.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

- Oral: no data available
- 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

no data available

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: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Removal of carbamazepine in German sewage treatment plants was found to be extremely low at 7%(1). Using a batch suspension of activated sludge maintained under aerobic conditions, an initial decrease in 5.0 ug/L carbamazepine was observed in the first 15 minutes, then reached a constant level of 3.1 ug/L; 37% loss was attributed to adsorption to sludge. No metabolites were identified and no further degradation was observed(2).

Bioaccumulative potential

An estimated BCF of 15 was calculated in fish for carbamazepine(SRC), using a log Kow of 2.45(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 carbamazepine is estimated as 510(SRC), using a log Kow of 2.45(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that carbamazepine is expected to have moderate mobility in soil. In a soil column study using Mahall-Leveen sandy soil from an area northwest of Phoenix, AZ, carbamazepine was detected in the column leachate at a concentration of 0.116 ug/L following addition of the compound at 0.170 ug/L 20 days prior(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: UN1170 (For reference only, please check.)

IMDG: UN1170 (For reference only, please check.)

IATA: UN1170 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) (For reference only, please check.)

IMDG: ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) (For reference only, please check.)

IATA: ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (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

Not 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/