ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Phenylbutazone

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

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

Product identifier

Product name	: Phenylbutazone
CBnumber	: CB0370134
CAS	: 50-33-9
EINECS Number	: 200-029-0
Synonyms	: PHENYLBUTAZONE,PBZ

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 3, Oral

Acute toxicity - Category 4, Dermal

Skin irritation, Category 2

Skin sensitization, Category 1

Eye irritation, Category 2

Acute toxicity - Category 4, Inhalation

Respiratory sensitization, Category 1

Specific target organ toxicity – single exposure, Category 3

Carcinogenicity, Category 2

Label elements

Pictogram(s)

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Signal word Danger

Hazard statement(s)

H301 Toxic if swalloed

H312 Harmful in contact with skin

H315 Causes skin irritation

H319 Causes serious eye irritation

H332 Harmful if inhaled

H335 May cause respiratory irritation

H351 Suspected of causing cancer

H361 Suspected of damaging fertility or the unborn child

Precautionary statement(s)

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.

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER or doctor/physician.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P405 Store locked up.

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

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/...

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

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

P271 Use only outdoors or in a well-ventilated area.

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

P203 Obtain, read and follow all safety instructions before use.

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/...

P317 Get medical help.

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

P332+P317 If skin irritation occurs: Get medical help.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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.

P319 Get medical help if you feel unwell.

P318 IF exposed or concerned, get medical advice.

Storage

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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	: Phenylbutazone
Synonyms	: PHENYLBUTAZONE,PBZ
CAS	: 50-33-9
EC number	: 200-029-0
MF	: C19H20N2O2
MW	: 308.37

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

SYMPTOMS: Symptoms of exposure to this compound include agranulocytosis, nausea, vomiting, epigastric pain, tinnitus, convulsions, coma, sodium retention, edema, aplastic anemia and leukopenia. Other symptoms include leukemia, cyanosis, respiratory depression, agitation, hallucinations, hypertension, reactivation of pre-existing peptic ulcers, ulcerative esophagitis, hepatic necrosis, glomerulonephritis, kidney stones, kidney failure, pericarditis, diffuse interstitial myocarditis with muscle necrosis, blood dyscrasias, hemolytic anemia, pancytopenia, optic neuritis causing blurred vision, toxic amblyopia, detached retina and allergic reactions such as rash, urticaria, arthralgia, Lyell's syndrome,

Steven-Johnson syndrome, erythema multiforme and anaphylactic shock. It may cause kidney damage, bone marrow depression, excessive perspiring, stupor, ulceration of the buccal and gastrointestinal mucosa, cardiac toxicity, perivascular granulomata, thrombocytopenic purpura and exfoliative dermatitis. It may also cause fever, hematuria (blood in the urine), peptic ulcer, hypersensitivity reactions, hepatitis, sore throat, lesions in the mouth, dyspepsia, unusual bleeding or bruising, black or tarry stools or other evidence of intestinal ulceration, weight gain, thrombocytopenia, hemorrhagic diathesis, perforation, gastrointestinal bleeding, jaundice, death, abdominal discomfort and distress, indigestion, heartburn, water retention, abdominal distention with flatulence, constipation, diarrhea, gastritis, salivary gland enlargement, stomatitis (sometimes with ulceration), vasculitis, serum sickness, systemic lupus erythematosus, aggravation of temporal arteritis, pruritis, erythema nodosum, nonthrombocytopenic purpura, chloride retention, fluid retention, plasma dilution, congestive heart failure, metabolic acidosis, respiratory alkalosis, proteinuria, ureteral obstruction with uric acid crystals, anuria, nephrotic syndrome, impaired renal function, interstitial nephritis, headache, drowsiness, confusional states, lethargy, tremors, numbness, weakness, hyperglycemia hearing loss, scotomata, retinal hemorrhage, oculomotor palsy, thyroid hyperplasia, goiters associated with hyperthyroidism and hypothyroidism, pancreatitis, hematemesis, restlessness, dizziness, psychosis, hyperpyrexia, electrolyte disturbances, hyperventilation, hypotension, oliguria, cardiac arrest, anemia, leukocytosis and hypoprothrombinemia. Exposure may lead to vertigo, gastric irritation with ulceration, goiter, epidermal necrolysis, impaired hepati function and renal failure. Exposure may also lead to liver damage, degenerative changes in the brain, mental disturbances, difficulty in hearing, thready pulse, anorexia, pharyngeal membrane, enlargement of the liver and spleen, adrenol necrosis and uremia. Eye effects include a variety of eye disturbances, severe keratitis with involvement of the conjunctiva, cornea and tear glands which may result in scarring of the corneas with opacification vascularization and symblepharon, and rarely, diplopia. Granulocytopenia has occurred. Other symptoms may include insomnia, euphoria, nervousness and electrolyte retention. ACUTE/CHRONIC HAZARDS: This compound is harmful if swallowed, inhaled or absorbed through the skin. It may cause irritation. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. (NTP, 1992)

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, and hypotension if the occur. Antacids may be used for mild GI upset. Replace fluid losses with intravenous crystalloid solutions. Nonsteroidal anti-inflammatory drugs

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SECTION 5: Firefighting measures

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)

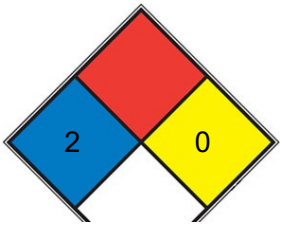
Specific Hazards Arising from the Chemical

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

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		
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

Stable if stored at room temperature in closed containers in absence of moisture.

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	Powder
Colour	White to almost white
Odour	ODORLESS
Melting point/freezing point	182°C(lit.)
Boiling point or initial boiling point and boiling range	94°C(lit.)
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	-14°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	pH of aqueous solution = 8.2
Kinematic viscosity	no data available
Solubility	Practically insoluble in water, sparingly soluble in alcohol. It dissolves in alkaline solutions.
Partition coefficient n-octanol/water	no data available
Vapour pressure	6.38X10-7 mm Hg at 25 deg C (est)
Density and/or relative density	1.173g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

Reactivity

This compound is relatively stable at ambient temperatures. Aqueous decomposition of this chemical occurs by hydrolysis and oxidation. Insoluble in water.

Chemical stability

no data available

Possibility of hazardous reactions

PHENYLBUTAZONE is incompatible with strong oxidizers, strong acids and strong bases. (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitrogen oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 245 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

Inadequate evidence of carcinogenicity in humans. No data are available in animals. OVERALL EVALUATION: Group 3: The agent is not classifiable as to its carcinogenicity to humans.

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

PURE CULTURE: Microbial conversion of phenylbutazone with the fungus Rhizopus arrhizus Fischer gave 4-hydroxyphenylbutazone in excellent yield(1).

Bioaccumulative potential

An estimated BCF of 56 was calculated in fish for phenylbutazone(SRC), using a log Kow of 3.16(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), provided the compound is not metabolized by the organism(SRC).

Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of phenylbutazone can be estimated to be 2,270(SRC). A soil Koc of 15,800 has also been reported for phenylbutazone(2), but it is not clear whether this value is estimated or based on measurement(SRC). According to a classification scheme(2), these Koc values suggest that phenylbutazone is expected to have slight to no mobility in soil.

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)

Not 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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