SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 11, 2017

Revision Date: Aug 11, 2017

1. Identification

1.1 GHS Product identifier

Product name	allopurinol

1.2 Other means of identification

Product number	-
Other names	AL-100

1.3 Recommended use of the chemical and restrictions on use

Identified uses	For industry use only.
Uses advised against	no data available

2. Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Oral, Category 3

Skin sensitization, Category 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word

Danger

Hazard statement(s)	H301 Toxic if swallowed
	H317 May cause an allergic skin reaction
Precautionary statement(s)	
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.
Response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/⋯
	P321 Specific treatment (see ... on this label).
	P330 Rinse mouth.
	P302+P352 IF ON SKIN: Wash with plenty of water/...
	P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
	P362+P364 Take off contaminated clothing and wash it before reuse.
Storage	P405 Store locked up.
Disposal	P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

---

3. Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
allopurinol	allopurinol	315-30-0	none	100%

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include toxic epidermal necrolysis with pseudomembranous conjunctivitis and ulceration of the lids and conjunctivae of both corneas. Cataracts may also occur. It may also cause Lesch-Nyhan syndrome, lymphosarcoma, reduced serum and urinary uric acid levels, hepatotoxicity, drowsiness, xanthine crystalluria, death (rare), myeloma, congestive myocardial disease, painful urination, blood in the urine, swelling of the lips and mouth, alkaline phosphatase increase, SGOT/SGPT increase, acute attacks of gout, ecchymosis, necrotizing angiitis, hepatic necrosis, hyperbilirubinemia, gastritis, dyspepsia, thrombocytopenia, myopathy, peripheral neuropathy, neuritis, paresthesia, somnolence, epistaxis, Lyell's syndrome, purpura, dermatitis and salivary gland swelling. Other symptoms may include skin rashes, fever, nausea, vomiting, diarrhea, leukopenia and eosinophilia. Reversible liver impairment may also occur. Exposure may cause maculopapular rashes, pruritus, abdominal pain, malaise

and headaches. Exposure may also cause erythematous skin eruptions, aching muscles, bone marrow depression, vertigo and gastric irritation. It may also cause exfoliative lesions, urticaria, purpuric skin rash, hepatomegaly and peripheral neuritis. Other symptoms of exposure to this chemical may include chills, leukocytosis, Stevens-Johnson syndrome, vasiculitis, anorexia, severe weight loss, acute renal failure, aplastic anemia and agranulocytosis. Exposure may also lead to hypersensitivity, arthralgia, alopecia, liver damage, oxypurine calculi, xanthine stones, ichthyosis, general weakness, severe allergic reactions, hepatic abnormalities, neutropenia, oliguria, uremia, extensive intracutaneous infections, sepsis, pneumonia, hepatic necrosis, cholangitis, pericholangitis, jaundice, lymphadenopathy, granulomas in the liver, nephritis, severe arteritis and sarcoidoisis. Muscle weakness may occur. ACUTE/CHRONIC HAZARDS: When heated to decomposition this compound emits toxic fumes of nitrogen oxides.

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

Treatment for hypersensitivity reaction: Administer glucocorticoids. Prolonged administration may be required after a severe reaction.

---

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.

5.2 Specific hazards arising from the chemical

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

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

---

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 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.

6.3 Methods and materials for containment and cleaning up

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.

---

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 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.

---

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective

equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. 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

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9. Physical and chemical properties

Physical state	White to Off-White Solid
Colour	FLUFFY WHITE TO OFF-WHITE POWDER
Odour	SLIGHT
Melting point/ freezing point	384°C(lit.)
Boiling point or initial boiling point and boiling range	196°C(lit.)
Flammability	no data available
Lower and upper explosion limit / flammability limit	no data available
Flash point	66°C(lit.)
Auto-ignition temperature	no data available
Decomposition	no data available

temperature	
pH	no data available
Kinematic viscosity	no data available
Solubility	In water:0.35 g/L (25 °C)
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	1.17X10-8 mm Hg at 25°C (est)
Density and/or relative density	1.89g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

10. Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable in light and air

10.3 Possibility of hazardous reactions

4-HYDROXYPYRAZOLO(3,4-D)PYRIMIDINE is an amine derivative. Amines are chemical bases. They neutralize acids to form salts plus water. These acid-base reactions are exothermic. The amount of heat that is evolved per mole of amine in a neutralization is largely independent of the strength of the amine as a base. Amines may be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. Flammable gaseous hydrogen is generated by amines in combination with strong reducing agents, such as hydrides. This chemical darkens above 300°C, and at an indefinite high temperature, it chars and decomposes. At 105°C, maximum stability occurs at pH 3.1- 3.4. This chemical decomposes in acidic and basic solutions.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

/Incompatible with/ strong oxidizing agents.

10.6 Hazardous decomposition products

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

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

12. Ecological information

12.1 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

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for allopurinol(SRC), using a log Kow of -0.55(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 allopurinol is estimated as 71(SRC), using a log Kow of -0.55(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that allopurinol is expected to have high mobility in soil.

12.5 Other adverse effects

no data available

13. Disposal considerations

13.1 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.

14. Transport information

14.1 UN Number

ADR/RID: UN2811 IMDG: UN2811 IATA: UN2811

14.2 UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S.
IMDG: TOXIC SOLID, ORGANIC, N.O.S.
IATA: TOXIC SOLID, ORGANIC, N.O.S.

14.3 Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packing group, if applicable

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15. Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
allopurinol	allopurinol	315-30-0	none

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)	Not Listed.

16. Other information

Information on revision

Creation Date	Aug 11, 2017
Revision Date	Aug 11, 2017

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/
