

## Chemical Safety Data Sheet MSDS / SDS

**Isoniazid**Revision Date:2024-03-23 Revision Number:1

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

Product name : Isoniazid  
CBnumber : CB5102053  
CAS : 54-85-3  
EINECS Number : 200-214-6  
Synonyms : ISONIAZID,Isonicotinohydrazide

**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 : 400-158-6606

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Acute toxicity - Category 4, Oral  
Skin irritation, Category 2

**Label elements****Pictogram(s)**

☐

Signal word : Warning

**Hazard statement(s)**

H302 Harmful if swallowed  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation  
H371 May cause damage to organs  
H373 May cause damage to organs through prolonged or repeated exposure

**Precautionary statement(s)**

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 thoroughly after handling.

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

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

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

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

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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/...

#### **Response**

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

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

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

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

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

#### **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

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Isoniazid
Synonyms	: ISONIAZID,Isonicotinohydrazide
CAS	: 54-85-3
EC number	: 200-214-6
MF	: C6H7N3O
MW	: 137.14

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## SECTION 4: First aid measures

## **Description of first aid measures**

### **If inhaled**

Fresh air, rest.

### **Following skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap.

### **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. Give a slurry of activated charcoal in water to drink. Refer for medical attention .

## **Most important symptoms and effects, both acute and delayed**

SYMPTOMS: Symptoms of exposure to this compound include irritation of the skin, peripheral nerve sensory changes, somnolence, anorexia, sweating, respiratory depression, urine changes and toxic psychosis. Other symptoms include dizziness, paresthesias, fatal hepatitis, metabolic acidosis, convulsions and coma. It can cause headache, muscle twitching, deafness, polyneuritis, paralysis and pyridoxine deficiency. It can also cause nausea, vomiting, atropinic signs such as mydriasis, brightly colored lights and other visual hallucinations, tachycardia, peripheral neuropathy, other central nervous system reactions, stupor, exhaustion, urinary retention, liver damage, bone marrow damage and death. Exposure may cause fatigue, weakness, malaise, toxic encephalopathy, optic neuritis, optic atrophy, memory impairment, epigastric distress, elevated serum transaminases (SGOT, SGPT), bilirubinemia, bilirubinuria, jaundice, agranulocytosis hemolytic anemia, sideroblastic anemia, aplastic anemia, thrombocytopenia, eosinophilia, fever, skin eruptions (morbilliform, maculopapular, purpuric or exfoliative), lymphadenopathy, vasculitis, pellagra, hyperglycemia, gynecomastia, rheumatic syndrome, systemic lupus erythematosus-like syndrome, blurred vision, respiratory distress, central nervous system depression, severe and intractable seizures and acetonuria. Exposure may also cause gastrointestinal effects, liver necrosis, slight euphoria, irritability, nervousness, insomnia, excessive dreaming and giddiness. Other symptoms include peripheral neuritis, burning of the feet, reduction of central vision and papilledema. Hyperreflexia, vertigo, ataxia, tinnitus, hepatic reactions, hypersensitivity reactions and lethargy may occur. Constipation, difficulty in starting urination, dryness of the mouth, mood-elevating effect and mental disturbances, ranging from minor personality changes to major mental derangements. This compound may also cause skin rash, urticaria, arthritic symptoms such as back pain, bilateral proximal interphalangeal joint involvement, arthralgia of the knees, elbows and wrists and "shoulder-hand" syndrome; separation of ideas and reality, florid psychosis, loss of self-control, excessive sedation, incoordination and methemoglobinemia. ACUTE/CHRONIC HAZARDS: This compound is an irritant of the skin, eyes, mucous membranes and upper respiratory tract. It is harmful by ingestion, inhalation and skin absorption. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides, ammonia and partially oxidized hydrocarbons. (NTP, 1992)

## **Indication of any immediate medical attention and special treatment needed**

Emergency and supportive measures; 1. Maintain an open airway and assist ventilation if necessary. 2. Treat coma, seizures, and metabolic acidosis if they occur. Administer diazepam, 0.1-0.2 mg/kg IV, for treatment of seizures.

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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)

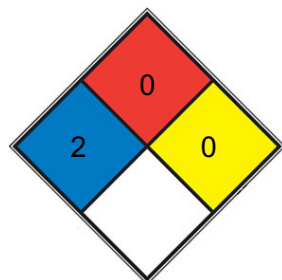
### **Specific Hazards Arising from the Chemical**

This chemical is combustible. (NTP, 1992)

### Advice for firefighters

Use water spray, powder, foam, carbon dioxide.

### 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

Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Personal protection: P2 filter respirator for harmful particles.

### Environmental precautions

Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Personal protection: P2 filter respirator for harmful particles.

### 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. 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

Cool. Well closed. Store below 40 deg C (104 deg C), preferably between 15 and 30 deg C (59 and 86 deg F), unless otherwise specified by manufacturer. Store in a tight, light-resistant container. Protect from freezing. NOTE: Crystallization may occur at low temperatures. Upon warming to room temperature, the crystals will redissolve.

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## 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 safety spectacles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Crystals or Crystalline Powder
Colour	White or colorless
Odour	no data available
Melting point/freezing point	-8°C(lit.)
Boiling point or initial boiling point and boiling range	212°C(lit.)
Flammability	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	75°C(lit.)

Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	6-8 (50g/l, H <sub>2</sub> O, 20°C)
Kinematic viscosity	no data available
Solubility	125g/l
Partition coefficient n-octanol/water	no data available
Vapour pressure	Negligible (NTP, 1992)
Density and/or relative density	1.244g/cm <sup>3</sup>
Relative vapour density	no data available
Particle characteristics	no data available

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## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating and on burning. This produces toxic fumes including nitrogen oxides.

### Chemical stability

Stable at room temp for more than 14 days in aq soln and more than 6 wk when stored at about 4 deg c.

### Possibility of hazardous reactions

ISONIAZID is incompatible with chloral, aldehydes, iodine, hypochlorites and ferric salts. It is also incompatible with oxidizers. It may react with sugars and ketones. It can react as a weak acid or a weak base. It can be decomposed by oxidative and reductive reactions. (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/.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD<sub>50</sub> Rat oral 650 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. Limited evidence of carcinogenicity 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**

The substance may cause effects on the nervous system and kidneys. This may result in disorientation, lethargy, coma and metabolic acidosis. Exposure at high levels could cause death. Exposure could cause unconsciousness.

### **STOT-repeated exposure**

The substance may have effects on the central nervous system and liver. This may result in tissue lesions and impaired functions.

### **Aspiration hazard**

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

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## 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**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **Other adverse effects**

no data available

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## 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.

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## 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

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## 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.

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## 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](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/>

### **Other Information**

Many trade names are known for this compound.

#### **Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.