

## Chemical Safety Data Sheet MSDS / SDS

## 3-Amino-1,2,4-Triazole

Revision Date:2025-10-25 Revision Number:1

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

## Product identifier

Product name : 3-Amino-1,2,4-Triazole  
CBnumber : CB6767936  
CAS : 61-82-5  
EINECS Number : 200-521-5  
Synonyms : 3-Amino-1,2,4-triazole,Amitrole

## 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

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Warning

## Precautionary statements

P501 Dispose of contents/container to....  
P405 Store locked up.  
P391 Collect spillage. Hazardous to the aquatic environment  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P281 Use personal protective equipment as required.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P273 Avoid release to the environment.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P270 Do not eat, drink or smoke when using this product.  
P264 Wash skin thoroughly after handling.

P264 Wash hands thoroughly after handling.

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

P202 Do not handle until all safety precautions have been read and understood.

P201 Obtain special instructions before use.

#### **Hazard statements**

H411 Toxic to aquatic life with long lasting effects

H373 May cause damage to organs through prolonged or repeated exposure

H372 Causes damage to organs through prolonged or repeated exposure

H361 Suspected of damaging fertility or the unborn child

H320 Causes eye irritation

H317 May cause an allergic skin reaction

H302 Harmful if swallowed

#### **Disposal**

WARNING: Cancer - <https://oehha.ca.gov/proposition-65/chemicals/amtrole>

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## SECTION 3: Composition/information on ingredients

### **Substance**

|              |                                                |
|--------------|------------------------------------------------|
| Product name | : 3-Amino-1,2,4-Triazole                       |
| Synonyms     | : 3-Amino-1,2,4-triazole,Amitrole              |
| CAS          | : 61-82-5                                      |
| EC number    | : 200-521-5                                    |
| MF           | : C <sub>2</sub> H <sub>4</sub> N <sub>4</sub> |
| MW           | : 84.08                                        |

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. Call in physician.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Carbon oxides Nitrogen oxides (NO<sub>x</sub>) Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

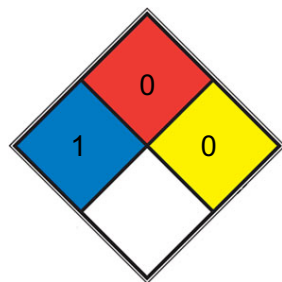
### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



■ HEALTH 1 Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

■ 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,[N<sub>2</sub>](#))

□ SPEC.

□ HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **Environmental precautions**

Do not let product enter drains.

### **Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### **Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

#### **Hygiene measures**

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

For precautions see section 2.2.

### **Conditions for safe storage, including any incompatibilities**

#### **Storage conditions**

Tightly closed. Dry.

#### **Storage stability**

Recommended storage temperature

-20 °C

#### **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **control parameter**

#### **Hazard composition and occupational exposure limits**

Does not contain substances with occupational exposure limits.

## Exposure controls

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatrill? L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatrill? L

#### Body Protection

protective clothing

#### Respiratory protection

Recommended Filter type: Filter A-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains.

### Exposure limits

NIOSH REL: TWA 0.2 mg/m<sup>3</sup>; ACGIH TLV: TWA 0.2 mg/m<sup>3</sup>.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| Appearance                              | light yellow powder                      |
| Odour                                   | No data available                        |
| Odour Threshold                         | No data available                        |
| pH                                      | 6.4-7.4 (100g/l, H <sub>2</sub> O, 20°C) |
| Melting point/freezing point            | Melting point/range: 150 - 153 °C - lit. |
| Initial boiling point and boiling range | 144.35°C (rough estimate)                |
| Flash point                             | Not applicable                           |
| Evaporation rate                        | No data available                        |

|                                              |                                                                                      |
|----------------------------------------------|--------------------------------------------------------------------------------------|
| Flammability (solid, gas)                    | The product is not flammable. - Flammability (solids)                                |
| Upper/lower flammability or explosive limits | No data available                                                                    |
| Vapour pressure                              | < 0,1 hPa at 20 °C - OECD Test Guideline 104                                         |
| Vapour density                               | No data available                                                                    |
| Relative density                             | 1,54 at 20 °C - OECD Test Guideline 109                                              |
| Water solubility                             | 264 g/l at 20 °C - OECD Test Guideline 105- completely soluble                       |
| Partition coefficient: n-octanol/water       | log Pow: -0,93 at 20 °C - OECD Test Guideline 107 - Bioaccumulation is not expected. |
| Autoignition temperature                     | does not ignite                                                                      |
| Decomposition temperature                    | No data available                                                                    |
| Viscosity                                    | Viscosity, kinematic: No data available Viscosity, dynamic: No data available        |
| Explosive properties                         | No data available                                                                    |
| Oxidizing properties                         | No data available                                                                    |

### Other safety information

Surface tension 73,3 mN/m at 1g/l at 20 °C

Surface tension

Dissociation constant 4,3 at 25 °C

OECD Test Guideline 112

## SECTION 10: Stability and reactivity

### Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Exothermic reaction with:

Strong oxidizing agents Strong acids

acid halides Acid anhydrides Aluminum

Iron Copper

### Conditions to avoid

no information available

### Incompatible materials

Aluminum, Copper, Mild steel

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female -  $\geq 10.000$  mg/kg (OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h -  $> 439$  mg/m<sup>3</sup> (OECD Test Guideline 403)

LD50 Dermal - Rat - male and female -  $> 2.000$  mg/kg (OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h (OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation - 30 s (OECD Test Guideline 405)

#### Respiratory or skin sensitization

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473

Result: negative

Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

In vivo tests showed mutagenic effects

#### Carcinogenicity

No data available

#### Reproductive toxicity

Suspected of damaging the unborn child.

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure. Remarks:

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### Aspiration hazard

No data available

#### Toxicity

LD50 in mice, rats (g/kg): 14.7, 25.0 orally (Krller)

## SECTION 12: Ecological information

### Toxicity

#### Toxicity to fish

semi-static test LC50 - *Cyprinodon variegatus* (sheepshead minnow)

- > 1.000 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia static test LC50 - *Daphnia magna* (Water flea) - 18 mg/l - 48 h

and other aquatic invertebrates

(OECD Test Guideline 202)

#### Toxicity to algae

static test ErC50 - *Pseudokirchneriella subcapitata* (green algae) - > 5,1 mg/l - 5 h

(OECD Test Guideline 201)

#### Toxicity to bacteria

static test EC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)

### Persistence and degradability

Biodegradability aerobic - Exposure time 28 d

Result: 0 % - Not readily biodegradable. (OECD Test Guideline 301F)

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### Other adverse effects

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### Waste treatment methods

#### Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

#### Incompatibilities

Dust may be explosive in air. Keep away from strong oxidizers; strong acids; light and heat (decomposes). Corrosive to iron, aluminum, and copper. Sublimes undecomposed at reduced pressure.

#### Waste Disposal

Generators of waste containing this contaminant ( $\geq 100$  kg/mo) must conform with regulations governing storage, transportation, treatment, and waste disposal. Amitrol is resistant to hydrolysis and the action of oxidizing agents. Burning the compound with polyethylene is reported to result in .99% decomposition.

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## SECTION 14: Transport information

### UN number

ADR/RID: 3077 IMDG: 3077 IATA: 3077

### UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (3-Amino-1H-1,2,4-triazole)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (3-Amino-1H-1,2,4-triazole)

IATA: Environmentally hazardous substance, solid, n.o.s. (3-Amino-1H-1,2,4-triazole)

### Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

### Packaging group

ADR/RID: III IMDG: III IATA: III

### Environmental hazards

ADR/RID: yes IMDG Marine pollutant: yes IATA: yes

### Special precautions for user

### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

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## SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

### References

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 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)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Other Information

Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home.

#### 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.