

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2  
Creation Date: July 15, 2019  
Revision Date: August 08, 2025

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name 5-Nitrobenzimidazole

### 1.2 Other means of identification

Product number CCHM701081

Other names 6-nitro-benzimidazol; 5-nitro-benzimidazol; 5-Nrtiobenzimidazole

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

### 1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

### 1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Skin irritation, Category 2

Eye irritation, Category 2

Specific target organ toxicity – single exposure, Category 3

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

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

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

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

Response

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.

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.

P319 Get medical help if you feel unwell.

Storage

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

P405 Store locked up.

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.

## 2.3 Other hazards which do not result in classification

no data available

# SECTION 3: Composition/information on ingredients

## 3.1 Substances

| Chemical name        | Common names and synonyms | CAS number | EC number | Concentration |
|----------------------|---------------------------|------------|-----------|---------------|
| 5-Nitrobenzimidazole | 5-nitrobenzimidazole      | 94-52-0    | 202-341-2 | 100%          |

# SECTION 4: First-aid measures

## 4.1 Description of necessary 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.

## 4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Exposure to this chemical can cause irritation. ACUTE/CHRONIC HAZARDS: When heated to decomposition this compound emits toxic fumes of carbon monoxide, carbon dioxide and NOx. This chemical is harmful by inhalation, ingestion, or skin absorption. (NTP, 1992)

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

no data available

# SECTION 5: Fire-fighting measures

## 5.1 Suitable extinguishing media

Fires involving this compound should be controlled with a dry chemical, carbon dioxide, or Halon extinguisher. (NTP, 1992)

## 5.2 Specific hazards arising from the chemical

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

## 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

# SECTION 6: Accidental release measures

## 6.1 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.

## 6.2 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.

## 6.3 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

## 7.1 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.

## 7.2 Conditions for safe storage, including any incompatibilities

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

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## SECTION 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

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

#### Skin protection

Wear fire/flammable 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

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## SECTION 9: Physical and chemical properties and safety characteristics

|                                                          |                                                                           |
|----------------------------------------------------------|---------------------------------------------------------------------------|
| Physical state                                           | PHYSICAL DESCRIPTION: Off-white to pale yellow fluffy powder. (NTP, 1992) |
| Colour                                                   | Solid                                                                     |
| Odour                                                    | no data available                                                         |
| Melting point/freezing point                             | 285°C(dec.)(lit.)                                                         |
| Boiling point or initial boiling point and boiling range | 117°C/4mmHg(lit.)                                                         |
| Flammability                                             | no data available                                                         |
| Lower and upper explosion limit/flammability limit       | no data available                                                         |
| Flash point                                              | 42°C(lit.)                                                                |
| Auto-ignition temperature                                | no data available                                                         |
| Decomposition temperature                                | no data available                                                         |
| pH                                                       | no data available                                                         |
| Kinematic viscosity                                      | no data available                                                         |
| Solubility                                               | less than 0.1 mg/mL at 61.7° F (NTP, 1992)                                |
| Partition coefficient n-octanol/water                    | no data available                                                         |
| Vapour pressure                                          | no data available                                                         |
| Density and/or relative density                          | 1.525 g/cm <sup>3</sup>                                                   |
| Relative vapour density                                  | no data available                                                         |
| Particle characteristics                                 | no data available                                                         |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

6-NITROBENZIMIDAZOLE is incompatible with strong oxidizing agents and strong bases. (NTP, 1992)

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

## 10.6 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: 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

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## SECTION 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

AEROBIC: 5-Nitrobenzimidazole, present at 100 mg/l, reached 0% of its theoretical BOD in 6 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(1).

### 12.3 Bioaccumulative potential

BCFs of 0.7-1.8 were measured for 5-nitrobenzimidazole(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

### 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc for 5-nitrobenzimidazole can be estimated to be 120(SRC). According to a classification scheme(2), this estimated Koc value suggests that 5-nitrobenzimidazole is expected to have high mobility in soil. 5-Nitrobenzimidazole is predicted(3) to have two environmentally relevant pKa's, one at 3.7 and the other at 10.7, corresponding to the protonation and deprotonation of one of the nitrogens in the imidazole structure, respectively. Therefore, under neutral environmental conditions, 5-nitrobenzimidazole will exist in the uncharged form. At low pH, some 5-nitrobenzimidazole will be cationic, and in this form will be more likely to sorptive to soil particles.

### 12.5 Other adverse effects

no data available

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## SECTION 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.

## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN3152 (For reference only, please check.) IMDG: UN3152 (For reference only, please check.) IATA: UN3152 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

|                                                                                                                                                                       |                                                                                                                                                                    |                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADR/RID: POLYHALOGENATED BIPHENYLS, SOLID or HALOGENATED MONOMETHYLDIPHENYL- METHANES, SOLID or POLYHALOGENATED TERPHENYLS, SOLID (For reference only, please check.) | IMDG: POLYHALOGENATED BIPHENYLS, SOLID or HALOGENATED MONOMETHYLDIPHENYL- METHANES, SOLID or POLYHALOGENATED TERPHENYLS, SOLID (For reference only, please check.) | IATA: POLYHALOGENATED BIPHENYLS, SOLID or HALOGENATED MONOMETHYLDIPHENYL- METHANES, SOLID or POLYHALOGENATED TERPHENYLS, SOLID (For reference only, please check.) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 14.3 Transport hazard class(es)

ADR/RID: 9 (For reference only, please check.) IMDG: 9 (For reference only, please check.) IATA: 9 (For reference only, please check.)

### 14.4 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.)

### 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 IMO instruments

no data available

## SECTION 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   |
|--------------------------------------------------------------------------|---------------------------|------------|-------------|
| 5-nitrobenzimidazole                                                     | 5-nitrobenzimidazole      | 94-52-0    | 202-341-2   |
| 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                                      |                           |            | Not Listed. |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) |                           |            | Listed.     |
| Korea Existing Chemicals List (KECL)                                     |                           |            | Listed.     |

## SECTION 16: Other information

#### Information on revision

Creation Date July 15, 2019  
Revision Date August 08, 2025

#### 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/>

**Any questions regarding this SDS, Please send your inquiry to [info@cato-chem.com](mailto:info@cato-chem.com)**

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