

## Chemical Safety Data Sheet MSDS / SDS

## 4-nitrobenzoic acid SDS

Revision Date:2024-04-25 Revision Number:1

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8
Section 9	Section 10	Section 11	Section 12	Section 13	Section 14	Section 15	Section 16

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

Product name: 4-nitrobenzoic acid  
CAS: 62-23-7

**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.in  
Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090  
Telephone: +91 9550333722

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

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

## GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

### Hazard statement(s)

H302 Harmful if swallowed

H319 Causes serious eye irritation

### Precautionary statement(s)

#### 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.

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

#### 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 which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

**Substance**

Chemical name:	4-nitrobenzoic acid
Common names and synonyms:	4-nitrobenzoic acid
CAS number:	62-23-7
EC number:	200-526-2
Concentration:	100%

**SECTION 4: First aid measures****Description of necessary 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**

Rinse with plenty of water (remove contact lenses if easily possible).

**Following ingestion**

Rinse mouth. Refer for medical attention .

**Most important symptoms/effects, acute and delayed**

**SYMPTOMS:** Symptoms of exposure to this compound include irritation of the skin, eyes, mucous membranes and upper respiratory tract. **ACUTE/CHRONIC HAZARDS:** This compound may be harmful by inhalation, ingestion or skin absorption. It is an irritant of the skin, eyes, mucous membranes and upper respiratory tract. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide and nitrogen oxides. (NTP, 1992)

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

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean

patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Poisons A and B

## **SECTION 5: Firefighting measures**

### **Suitable 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)

### **Special protective actions for fire-fighters**

Use foam, dry powder, carbon dioxide.

## **SECTION 6: Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers.

### **Environmental precautions**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers.

### **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**

Separated from strong oxidants, bases and strong reducing agents.

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

### **Control parameters**

#### **Occupational Exposure limit values**

MAK: (inhalable fraction): 4 mg/m<sup>3</sup>; peak limitation category: I(2); carcinogen category: 3B; pregnancy risk group: C

#### **Biological limit values**

no data available

### **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.

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

#### **Eye/face protection**

Wear safety spectacles.

#### **Skin protection**

Protective gloves.

#### **Respiratory protection**

Use local exhaust.

#### **Thermal hazards**

no data available

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

Physical state:	Solid. Crystalline.
Colour:	Colorless, Yellow-white.
Odour:	no data available
Melting point/freezing point:	Ca. 238 °C.
Boiling point or initial boiling point and boiling range:	96 °C/10mmHg(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:	237° C
Auto-ignition temperature:	300° C
Decomposition temperature:	350° C
pH:	Ca. 2.8.
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 79° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = Ca. 1.89. Remarks: The temperature and pH is unknown.
Vapour pressure:	Ca. 0 mm Hg. Temperature: Ca. 25 °C.
Density and/or relative density:	Ca. 1.6.

Relative vapour density: no data available

Particle characteristics: no data available

## SECTION 10: Stability and reactivity

### Reactivity

Reacts with bases, reducing agents and strong oxidants strong oxidants. Decomposes on heating and on burning. This produces toxic fumes including nitrogen oxides nitrogen oxides.

### Chemical stability

no data available

### Possibility of hazardous reactions

CombustibleDust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.P-NITROBENZOIC ACID is incompatible with strong oxidizers. It is also incompatible with strong bases (potassium hydroxide). It may react with cyanides. (NTP, 1992)

### Conditions to avoid

no data available

### Incompatible materials

Mixtures of the acid with potassium hydroxide (1:2 mol) readily deflagrated, .

### Hazardous decomposition products

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

## 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**

The substance is irritating to the eyes, respiratory tract and skin.

**STOT-repeated exposure**

Animal tests show that this substance possibly causes toxicity to human reproduction or development.

**Aspiration hazard**

A nuisance-causing concentration of airborne particles can be reached quickly when dispersed, especially if powdered.



## SECTION 12: Ecological information

### Toxicity

Toxicity to fish: LC50 *Brachydanio rerio* (Zebrafish) >500 mg/L/48-hr; static bioassay (OECD guideline 203)

Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - ca. 1 295.053 mg/L - 48 h.

Toxicity to algae: EC5 - 537.796 mg/L - 96 h.

Toxicity to microorganisms: no data available

### Persistence and degradability

AEROBIC: Decomposition of nitrobenzoic acid took greater than 64 days by a soil microflora inoculum in mineral salts medium(1). After 180 minutes, little oxygen consumption by phenol adapted biological cultures occurred with 4-nitrobenzoic acid(2). The amounts of oxygen consumed after the 180 minute test time are 55 uL (endogenous), 64 uL (cells plus 100 mg/L 3-nitrobenzoic acid), and 346 uL (cells plus phenol - after 90 minutes) which results in a ratio of only 1.2 endogenous to 4-nitrobenzoic acid oxygen consumption(2). In a 2 week Japanese MITI test using 100 mg/L 4-nitrobenzoic acid and 30 mg/L sludge, 4-nitrobenzoic had a theoretical BOD of 62%(3). 4-Nitrobenzene reached 50.2% of its BOD in river water collected from Songhua River, China after 5 days. The river water samples contained about 8.0 mg/L dissolved oxygen, 800-3000/mL bacteria counts, pH 6.8-7.0, and temperatures of 15-20 deg C(4).

### Bioaccumulative potential

An estimated BCF of 3.2 was calculated for 4-nitrobenzoic acid(SRC), using a log Kow of 1.89(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).

### Mobility in soil

The Koc of 4-nitrobenzoic acid is estimated as 250(SRC), using a log Kow of 1.89(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 4-nitrobenzoic acid is expected to have moderate mobility in soil. The pKa of 4-nitrobenzoic acid is 3.44(4), indicating that this compound will exist almost entirely in the anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5).

### 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: 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

## **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.

## **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/>

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any