

Chemical Safety Data Sheet MSDS / SDS

2,4-Dinitrochlorobenzene

Revision Date:2026-05-31 Revision Number:1

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

Product name : 2,4-Dinitrochlorobenzene
CBnumber : CB9363786
CAS : 97-00-7
EINECS Number : 202-551-4
Synonyms : 1-chloro-2,4-dinitrobenzene,DNCB

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

Danger

Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.

P273 Avoid release to the environment.

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

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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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Hazard statements

H310 Fatal in contact with skin

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H318 Causes serious eye damage

H373 May cause damage to organs through prolonged or repeated exposure

H410 Very toxic to aquatic life with long lasting effects

SECTION 3: Composition/information on ingredients

Substance

Product name	: 2,4-Dinitrochlorobenzene
Synonyms	: 1-chloro-2,4-dinitrobenzene,DNCB
CAS	: 97-00-7
EC number	: 202-551-4
MF	: C6H3ClN2O4
MW	: 202.55

SECTION 4: First aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact

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

In case of eye contact

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

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Protection of first-aiders

For personal protection see section 8.

Notes to physician

No data available

SECTION 5: Firefighting measures

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

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

Specific hazards during fire fighting

Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

Hazardous combustion products

Carbon oxides Nitrogen oxides (NO_x) Hydrogen chloride gas

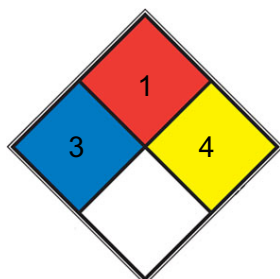
Specific extinguishing methods

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

Special protective equipment for fire-fighters

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

NFPA 704



HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

FIRE 1 Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. [mineral oil](#), ammonia)

REACT 4 Readily capable of detonation or explosive decomposition at normal temperatures and pressures (e.g. [nitroglycerin](#), chlorine dioxide, nitrogen triiodide)

SPEC.

HAZ.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7: Handling and storage

Handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture.

Storage

Further information on storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Storage class

6.1A, Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

Recommended storage temperature

Recommended storage temperature see product label.

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Engineering measures

No data available

Personal protective equipment

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type

Filter type P3

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.

Eye/face protection

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

Tightly fitting safety goggles

Skin and body protection

protective clothing

Hand protection

Material

Nitrile rubber

Break through time

480 min

Glove thickness

0.11 mm

Protective index

Full contact

Manufacturer

KCL 741 L

Material

Nitrile rubber

Break through time

480 min

Glove thickness

0.11 mm

Protective index

Splash contact

Manufacturer

KCL 741 L

Remarks

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D- 36124 Eichenzell, Internet: www.kcl.de).

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

crystalline

Color

yellow

Odor

Almond-like

Odor Threshold

No data available

pH

No data available

pH

3.5 - 5.5

Method: OECD Test Guideline 107 Bioaccumulation is not expected.

Melting point/ range

48 - 50 °C

Method: lit.

Boiling point/boiling range

315 °C

Method: lit.

Flash point

194 °C

Method: closed cup

Evaporation rate

No data available

Flammability (solid, gas)

No data available

Flammability (liquids)

No data available

Burning rate

No data available

Upper explosion limit / Upper flammability limit

Upper explosion limit

Lower explosion limit / Lower flammability limit

2 %(V)

Vapor pressure

0.000003 Pa (25 °C)

Method: OECD Test Guideline 104

Relative vapor density

6.98 (vs air)

Relative density

314

Density

1.7 g/cm³ (20 °C)

Water solubility

insoluble

Partition coefficient: n-octanol/water

log Pow: 2.24 (23.3 °C)

Autoignition temperature

464 °C

Decomposition temperature

No data available

Viscosity, dynamic

No data available

Viscosity, kinematic

No data available

Flow time

No data available

Explosive properties

Not classified as explosive.

Oxidizing properties

none

Surface tension

73 mN/m, 20 °C, Regulation (EC) No. 440/2008, Annex, A.5

Molecular weight

202.55 g/mol

Particle characteristics Particle size

No data available

Solubility

alcohol: very slightly soluble (cold)(lit.)

Physical state

Crystalline Mass, Chunks or Crystals and Powder

SECTION 10: Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. 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

Violent reactions possible with: Alkali metals Alcohols nitrogen oxides organic nitro compounds chlorates Nitric acid Water Organic Substances aluminium halides phenols Hydrazine hydrate combustible substances Risk of explosion with: Ammonia Reducing agents

Conditions to avoid

Strong heating.

Incompatible materials

No data available

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 939 mg/kg (OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rabbit - 130 mg/kg (OECD Test Guideline 402)

Remarks: (RTECS)

Skin corrosion/irritation

Skin - Rabbit

Result: Severe skin irritation - 24 h (OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Severe eye irritation - 24 h (OECD Test Guideline 405)

Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: May cause sensitization by skin contact.

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: TA98

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: positive

Carcinogenicity

Classified based on available data. For more details, see section 2

Reproductive toxicity

Classified based on available data. For more details, see section 2

Specific target organ toxicity - single exposure

Classified based on available data. For more details, see section 2

Specific target organ toxicity - repeated exposure

Classified based on available data. For more details, see section 2

Aspiration hazard

Classified based on available data. For more details, see section 2

11.2 Additional Information

RTECS: CZ0525000

Cough, Shortness of breath, Headache, Nausea, Vomiting

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption:

Nausea

Vomiting

Headache

Drowsiness

Shortness of breath

Circulatory collapse

Unconsciousness

Convulsions

Methaemoglobin formation after intensive contact with skin cannot be excluded.

The following applies to aromatic nitro compounds in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmias, drop in blood pressure, dyspnoea, and spasms; principal sign: cyanosis (blue discolouration of the blood).

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12: Ecological information

Ecotoxicity

Components:

1-chloro-2,4-dinitrobenzene:

Toxicity to fish

LC50 (Danio rerio (zebra fish)): 0.71 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 GLP: yes LC50 (Danio rerio (zebra fish)): 0.32 mg/l Exposure time: 96.0 h

LC50

0.1 mg/l Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.49 mg/l Exposure time: 48 h Test Type: static test Method: ISO 6341

Toxicity to algae/aquatic plants

EC50 (Desmodesmus subspicatus (green algae)): 0.151 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes

M-Factor (Acute aquatic toxicity)

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Toxicity to fish (Chronic toxicity)

NOEC (Danio rerio (zebra fish)): 0.05 mg/l Exposure time: 28 d Test Type: flow-through test Analytical monitoring: yes Method: OECD Test Guideline 204 GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

NOEC (Daphnia magna (Water flea)): 0.1 mg/l End point: Immobilization Exposure time: 21 d Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes

M-Factor (Chronic aquatic toxicity)

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Persistence and degradability

Components:

1-chloro-2,4-dinitrobenzene:

Biodegradability

aerobic Inoculum: activated sludge, adapted Concentration: 2.87 mg/l Result: Not readily biodegradable. Biodegradation: < 20 % Exposure time: 28 d Method: OECD Test Guideline 301B GLP: yes

Bioaccumulative potential

Components:

1-chloro-2,4-dinitrobenzene:

Partition coefficient: noctanol/water

log Pow: 2.24 (23.3 °C) pH: 3.5 - 5.5 Method: OECD Test Guideline 107 Remarks: Bioaccumulation is not expected.

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13: Disposal considerations

Disposal methods

Waste from residues

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

International Regulations

IATA-DGR

UN/ID No. : UN 3441

Proper shipping name : Chlorodinitrobenzenes, solid

Class : 6.1

Packing group : II

Labels : Division 6.1 - Toxic substances

Packing instruction (cargo aircraft) : 676

Packing instruction (passenger aircraft) : 669

IMDG-Code

UN number : UN 3441

Proper shipping name : CHLORODINITROBENZENES, SOLID

Class : 6.1

Packing group : II

Labels : 6.1

EmS Code : F-A, S-A

Marine pollutant : yes

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

Not applicable for product as supplied.

National regulation GB 6944/12268

UN number : UN 3441

Proper shipping name : CHLORODINITROBENZENES, SOLID

Class : 6.1

Packing group : II

Labels : 6.1

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15: Regulatory information

National regulatory information

Law on the Prevention and Control of Occupational Diseases

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)

Listed

No. / Code Chemical name / Category Threshold quantity

J5 Acute toxic 500 t

Hazardous Chemicals for Priority Management

Listed under SAWS

Regulations on Occupational Labor Protection in the at workplaces where

Toxic Substances Are Used

Catalogue of Highly Toxic Chemicals

Not listed

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals for Import and Export

Not listed

Regulation on the Administration of Precursor Chemicals

Catalogue and Classification of Precursor Chemicals

Not listed

SECTION 16: Other information

Full text of other abbreviations

GBZ 2.1-2007

Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

GBZ 2.1-2007 / PC-TWA AIC - Australian Invent Transport by Land of Bra bw - Body weight; CMR Standard of the German List (Canada); ECx - Conc associated with x%respo Chemical Substances (Jap response; ERG - Emerge GLP - Good Laboratory P

cer; IATA - International Construction and Equipm Half maximal inhibitory c tion; IECSC - Inventory o tional Maritime Dangerous
Industrial Safety and H Standardization; KECl - K tration to 50 % of a test (Median Lethal Dose); MA lution from Ships; n.o.s. No
Observed (Adverse) E fect Level; NOELR - No Norm; NTP - National Toxi icals; OECD - Organizatio fice of Chemical Safety a and
Toxic substance; PIC stances; (Q)SAR - (Quant (EC) No 1907/2006 of th Registration, Evaluation, Accelerating Decompositi
Chemical Substance Inve Thailand Existing Chemica States); UN - United Nat Transport of Dangerous WHMIS - Workplace Hazar

Permissible concentration - time weighted average ry of Industrial Chemicals

ANNT - National Agency for il

ASTM - American Society for the Testing of Materials

- Carcinogen, Mutagen or Reproductive Toxicant

DIN nstitute for Standardisation

DSL - Domestic Substances ntration associated with x% response

ELx - Loading rate se

EmS - Emergency Schedule

ENCS - Existing and New n)

ErCx - Concentration associated with x% growth rate cy Response Guide

GHS - Globally Harmonized System

actice

IARC - International Agency for Research on Canir Transport Association

IBC - International Code for the nt of Ships carrying Dangerous Chemicals in Bulk

IC50 ncentration

ICAO - International Civil Aviation Organiza- Existing Chemical Substances in China

IMDG - Interna- Goods

IMO - International Maritime Organization

ISHL alth Law (Japan)

ISO - International Organisation for rea Existing Chemicals Inventory

LC50 - Lethal Concenopulation

LD50 - Lethal Dose to 50% of a test population POL - International Convention for the Prevention of Pol- Not Otherwise Specified

Nch - Chilean Norm

NO(A)EC fect Concentration

NO(A)EL - No Observed (Adverse) Efbserveable Effect Loading Rate

NOM - Official Mexican ology Program

NZIoC - New Zealand Inventory of Chemfor Economic Co-operation and Development

OPPTS - Ofd Pollution Prevention

PBT - Persistent, Bioaccumulative S - Philippines Inventory of Chemicals and Chemical Subtative) Structure Activity Relationship

REACH - Regulation European Parliament and of the Council concerning the uthorisation and Restriction of Chemicals

SADT - Selfn Temperature

SDS - Safety Data Sheet

TCSI - Taiwan tory

TDG - Transportation of Dangerous Goods

TECI s Inventory

TSCA - Toxic Substances Control Act (United ons)

UNRTDG - United Nations Recommendations on the oods

vPvB - Very Persistent and Very Bioaccumulative

ous Materials Information System

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.