SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name 3-nitrotoluene

1.2 Other means of identification

Product number -
Other names 3-Nitrotoluene; Benzene, 1-methyl-3-nitro-; 3-NITROTOLUOL

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yansheng Internet Technology Co., Ltd
Address 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China
Telephone +86-4000-6969-66

1.5 Emergency phone number

Emergency phone number +86-4000-6969-66
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

Acute toxicity - Category 3, Oral
Acute toxicity - Category 3, Dermal
Acute toxicity - Category 3, Inhalation
Specific target organ toxicity – repeated exposure, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger
Hazard statement(s) H301 Toxic if swallowed
H311 Toxic in contact with skin
H331 Toxic if inhaled
H373 May cause damage to organs through prolonged or repeated exposure

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/... P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P260 Do not breathe dust/fume/gas/mist/vapours/spray.
Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. P361+P364 Take off immediately all contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P319 Get medical help if you feel unwell.
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
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
3-nitrotoluene	3-nitrotoluene	99-08-1	202-728-6	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

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. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

INHALATION, INGESTION OR SKIN ABSORPTION: Headache, flushing of face, dizziness, difficult breathing, cyanosis, nausea, vomiting, muscular weakness, increased pulse and respiratory rate, irritability and convulsions. EYES: Slight irrita- tion. SKIN: Slight irritation. (USCG, 1999)

4.3 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 as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on 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. Aromatic hydrocarbons and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

To fight fire use water, carbon dioxide, dry chemical.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Emits toxic fumes of oxides of nitrogen. Behavior in Fire: Emits toxic fumes. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. Combat fire from a sheltered position.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Ventilation. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Ventilation. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Ventilate area of spill or leak. For small quantities of liquid nitrotoluene, absorb on paper towels. For small quantities of solid nitrotoluene, sweep onto paper or other suitable material. Remove to a safe place (such as a fume hood) and burn paper. Large quantities of liquid nitrotoluene can be collected and atomized in a suitable combustion chamber equipped with an appropriate effluent gas cleaning device. Large quantities of solid nitrotoluene can be reclaimed; however, if this is not practical, dissolve in a flammable solvent (such as alcohol) and atomize in a suitable combustion chamber equipped with an appropriate effluent gas cleaning device. nitrotoluene

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. NO contact with strong oxidizing agents or sulfuric acid. 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

Separated from strong oxidants, sulfuric acid and food and feedstuffs. Cool. Dry. Keep in a well-ventilated room.Separated from strong oxidants, sulfuric acid, food and feedstuffs. Cool. Dry. Keep in a well-ventilated room.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 2 ppm as TWA; (skin); BEI issued.MAK: skin absorption (H); carcinogen category: 3B

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 face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid.
Colour	Clear yellow.
Odour	Weak, aromatic odor
Melting point/freezing point	16.1 °C.
Boiling point or initial boiling point and boiling range	231.9 °C. Atm. press.:101.3 kPa.;156.9 °C. Atm. press.:13.3 kPa.;50.2 °C. Atm. press.:0.13 kPa.
Flammability	Class IIIB Combustible Liquid: Fl.P. at or above 200°F.
Lower and upper explosion limit/flammability limit	no data available
Flash point	106 °C. Atm. press.:1 013 mBar.
Auto-ignition temperature	450 °C.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 2.33. Temperature:20°C.
Solubility	Insoluble in water
Partition coefficient n-octanol/water	log Pow = 2.4.
Vapour pressure	16 Pa. Temperature:20 °C. Remarks:=0.16 hPa= 0.016 kPa.
Density and/or relative density	1.16. Temperature:20 °C.
Relative vapour density	4.73 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic gases including carbon monoxide and nitrogen oxides. Reacts with strong oxidants and sulfuric acid. This generates fire and explosion hazard. Attacks plastics, rubber and coatings.

10.2 Chemical stability

Heat contributes/ ... to instability. Nitrotoluene

10.3 Possibility of hazardous reactions

Combustible when exposed to heat, flame or oxidizers.M-NITROTOLUENE reacts with sulfuric acid, strong oxidizing agents and reducing agents.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Decomposes on contact with strong oxidzers; strong acids; reducing agents; strong bases; ammonia, amines producing toxic fumes, causing fire and explosion hazard. Heat above 190 deg C may cause explosive decomposition. Attacks some plastics, rubbers, and coatings.

10.6 Hazardous decomposition products

The substance decomposes on burning producing toxic gases, including carbon monoxide and nitrogen oxides.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male) - 2 121 mg/kg bw.
- Inhalation: LC50 - rat (male/female) - > 880 mg/m³ air.
- Dermal: LD50 - rat - > 1 157 mg/kg bw.

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

Evaluation: There is inadequate evidence in humans for the carcinogenicity of nitrotoluenes. There is inadequate evidence in experimental animals for the carcinogenicity of 3-nitrotoluene. ... Overall evaluation: Nitrotoluenes are not classifiable as to their carcinogenicity to humans (Group 3).

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the eyes and skin. The substance may cause effects on the blood. This may result in the formation of methaemoglobin. Medical observation is indicated. The effects may be delayed.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Pimephales promelas - 30 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: LC50 - Daphnia magna - 7.5 mg/L - 48 h.
- Toxicity to algae: EC50 - Chlorella pyrenoidosa - 14 mg/L - 96 h.
- Toxicity to microorganisms: EC50 - Tetrahymena pyriformis - 50 mg/L - 24 h.

12.2 Persistence and degradability

AEROBIC: 3-Nitrotoluene, present at 100 mg/L, reached 2% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese Ministry of Industry and Trade (MITI) test, which employs a mixed inoculum obtained from freshwater, soil, and sludge(1). Using unacclimated sludge as the inocululm(2) but lower concentrations of 3-nitrotoluene (10 ppm), complete degradation was observed to occur within 14 days. Other evidence supports complete aerobic degradation of 10 mg/L 3-nitrotoluene within 2 weeks when incubated in adapted aerobic composite river sediment and sewage sludges(3). When nitrotoluene-adapted activated sludges were used as an inoculum, however, 3-nitrotoluene (200 mg/L) was almost completely degraded (i.e. 98% removal) within 5 days when incubated at 20 deg C(4). Using a mixed culture isolated from a contaminated soil (near an ammunition plant), 3-nitrotoluene (at initial concentrations of 5 and 12 mg/L) degraded completely in 4 days in aerobic batch and continuous reactor tests(5).

12.3 Bioaccumulative potential

The BCF for 3-nitrotoluene in fish (Poecilia reticulata) was been experimentally determined to be 16(1). The BCF in carp (Cyprinus carpio) ranged from 0.47 to 12 at test concentrations of 2.5-25 ppb 3-nitrotoluene over a 6-week exposure period(2). According to a classification scheme(2), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of 3-nitrotoluene can be estimated to be 363(SRC). According to a classification scheme(2), this estimated Koc value suggests that 3-nitrotoluene is expected to have moderate mobility in soil. Field monitoring at a munition factory site in Melbourne Australia found that 3-nitrotoluene migrated large distances in the subsurface soils(3); 3-nitrotoluene is reported to have low soil Kd sorption coefficients in a variety of soils types(3) indicating it will leach.

12.5 Other adverse effects

no data available

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: UN1664 (For reference only, please check.) IMDG: UN1664 (For reference only, please check.) IATA: UN1664 (For reference only, please check.)

14.2 UN Proper Shipping Name

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

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (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
3-nitrotoluene	3-nitrotoluene	99-08-1	202-728-6
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			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			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 July 15, 2019

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
- 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

Depending on the degree of exposure, periodic medical examination is suggested.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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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 damage resulting from handling or from contact with the above product.