

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/10/2008

Reviewed on 11/10/2008

1 Identification of substance:

Product details:

Product name: 2,4-Dinitrotoluene

Manufacturer/Supplier:

Shangyu Jiehua Chemical Co., Ltd
51 Baiheng Rd., Sanpeng Bridge, Shangyu
312351, Zhejiang
P.R.China
Emergency Phone: +86 575 82131151
CHEMTREC: (800) 424-9300
Web Site: www.runyoutech.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.
After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

2,4-Dinitrotoluene (CAS# 121-14-2): 100%

Identification number(s):

EINECS Number: 204-450-0

Index number: 609-007-00-9

3 Hazards identification

Hazard description:



T Toxic

N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 45 May cause cancer.

R 23/24/25 Also toxic by inhalation, in contact with skin and if swallowed.

R 48/22 Also harmful: danger of serious damage to health by prolonged exposure if swallowed.

R 62 Possible risk of impaired fertility

R 68 Possible risk of irreversible effects.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	3
FIRE	1
REACTIVITY	1

Health (acute effects) = 3

Flammability = 1

Reactivity = 1

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4 First aid measures

General information

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Do not induce vomiting; immediately call for medical help.

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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7 Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away.

Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Crystalline
Color:	Yellow

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Odor:	Not determined
Change in condition	
Melting point/Melting range:	67-70°C (153-158°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	> 110°C (> 230°F)
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined
Solubility in / Miscibility with Water:	Insoluble

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Nitrogen oxides

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	790 mg/kg (mouse) 268 mg/kg (rat)
Dermal	LD50	>1 gm/kg (guinea pig)
Irritation of skin	mild	500 mg/24H (rabbit)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Tumorigenic effects have been observed on tests with laboratory animals.

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with insects.

Mutagenic effects have been observed on tests with laboratory animals.

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Subacute to chronic toxicity:**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - food intake (animal).

Related to Chronic Data - death.

Related to Chronic Data - changes in testicular weight.

Liver - changes in liver weight.

Blood - normocytic anemia.

Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).

Blood - methemoglobinemia-carboxyhemoglobin.

Blood - changes in other cell count (unspecified)

Blood - other changes.

Endocrine - changes in spleen weight.

Endocrine - changes in luteinizing hormone.

Brain and Coverings - other degenerative changes.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).

Reproductive - Paternal Effects - testes, epididymis, sperm duct.

Skin and Appendages - tumors.

Kidney, Ureter, Bladder - Kidney tumors.

Kidney, Ureter, Bladder - tumors.

Reproductive - Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea)

Reproductive - Fertility - other measures of fertility.

Reproductive - Paternal Effects - spermatogenesis.

Tumorigenic - neoplastic by RTECS criteria.

Tumorigenic - carcinogenic by RTECS criteria.

Tumorigenic - equivocal tumorigenic agent by RTECS criteria.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Danger through skin absorption.

Possible risk of impaired fertility.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

12 Ecological information:**Ecotoxicological effects:**

Remark: Toxic for fish

General notes:

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Toxic for aquatic organisms

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13 Disposal considerations

Product:**Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.

14 Transport information

DOT regulations:

Hazard class: 6.1
Identification number: UN3454
Packing group: II
Proper shipping name (technical name): DINITROTOLUENES, SOLID
Label: 6.1

Land transport ADR/RID (cross-border)

ADR/RID class: 6.1 (T2) Toxic substances
Danger code (Kemler): 60
UN-Number: 3454
Packaging group: II
Description of goods: 3454 DINITROTOLUENES, SOLID

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 3454
Label: 6.1
Packaging group: II
Proper shipping name: DINITROTOLUENES, SOLID

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 3454
Label: 6.1

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Packaging group:	II
Proper shipping name:	DINITROTOLUENES, SOLID

15 Regulations

Product related hazard informations:

Hazard symbols:

T Toxic
N Dangerous for the environment

Risk phrases:

45 May cause cancer.
23/24/25 Also toxic by inhalation, in contact with skin and if swallowed.
48/22 Also harmful: danger of serious damage to health by prolonged exposure if swallowed.
62 Possible risk of impaired fertility
68 Possible risk of irreversible effects.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

53 Avoid exposure - obtain special instructions before use.
45 In case of accident or if you feel unwell, seek medical advice immediately.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.
This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.
Contact: Paul V. Connolly