TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**May cause extreme heat or explosion by heat, shock or friction. Toxic compound, do not ingest or inhale. Avoid all contact with this material. POSSIBLE MUTAGEN. MINIMIZE EXPOSURE. Irritating to skin, eyes, and the respiratory system. CARCINOGEN. MINIMIZE EXPOSURE.**	

Section I. Chemical Product and Company Identification

Chemical Name **2,6-Dinitrotoluene**

Catalog Number	D1151
Synonym	Benzene, 2-methyl-1,3-dinitro- (9CI)
Chemical Formula	$C_7H_6N_2O_4$
CAS Number	606-20-2

Supplier
TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

In case of Emergency Call
Chemtrec®
(800) 424-9300 (U.S.)
(703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
2,6-Dinitrotoluene	606-20-2	Min. 99.0% (GC)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.	Rat LD_{50} (oral) 177mg/kg Rat LC_{50} (inhalation) 240 mg/m^3 /4H Mouse LD_{50} (oral) 621 mg/kg

Section III. Hazards Identification

Acute Health Effects

Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.
Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects

CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Tumorigenic Effects
Rat TD (Oral) 5110 mg/kg/1year continuous
Toxic Effects:
Tumorigenic- Equivocal tumorigenic agent by RTECS criteria
Liver- Tumors
Rat TDLo (Oral) 2555 mg/kg/1year continuous
Toxic Effects:
Tumorigenic- Carcinogenic by RTECS criteria
Liver- Tumors
DEVELOPMENTAL TOXICITY: Not available.
Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. First Aid Measures

Eye Contact

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. COLD water may be used. WARM water MUST be used. Get medical attention.

Skin Contact

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation

If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.

Ingestion

INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Continued on Next Page

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	207°C (404.6°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO_2), nitrogen oxides (NO, NO_2).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Toxic material. Carcinogenic material. Mutagenic material. Irritating material. May cause extreme heat or explosion by heat, shock or friction. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	TOXIC. CARCINOGEN. MUTAGEN. IRRITANT. May cause extreme heat or explosion by heat, shock or friction. Keep locked up.. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, reducing agents, alkalis (bases).

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen. This compound is classified as a possible mutagen. There is no acceptable exposure limit for a mutagen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (Light Yellow Crystals and Small Lumps.)	Solubility	Very slightly soluble in cold water.
Specific Gravity	1.54 (water=1)		
Molecular Weight	182.13	Partition Coefficient	Log P_{ow} 2.05
Boiling Point	285°C (545°F)	Vapor Pressure	0.006 mmHg
Melting Point	57 to 65°C (134.6 to 149°F)	Vapor Density	6.28
Refractive Index	1.479	Volatility	Not available.
Critical Temperature	Not available.	Odor	Slight
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents, reducing agents, strong alkalis (bases).

Continued on Next Page

Section XI. Toxicological Information

RTECS Number	XT1925000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD_{50} (oral) 177mg/kg Rat LC_{50} (inhalation) 240 mg/m^3/4H Mouse LD_{50} (oral) 621 mg/kg Not available.
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Carcinogenic by RTECS criteria **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Tumorigenic Effects Rat TD (Oral) 5110 mg/kg/1year continuous Toxic Effects: Tumorigenic- Equivocal tumorigenic agent by RTECS criteria Liver- Tumors Rat TDLo (Oral) 2555 mg/kg/1year continuous Toxic Effects: Tumorigenic- Carcinogenic by RTECS criteria Liver- Tumors **DEVELOPMENTAL TOXICITY**: Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	2,6-Dinitrotoluene's production and use in the synthesis of TNT, urethane polymers, flexible and rigid foams, surface coatings and dyes may result in its release to the environment through various waste streams. If released to air, a vapor pressure of 5.67X10-4 mm Hg at 25 deg C indicates 2,6-dinitrotoluene is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,6-dinitrotoluene will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 75 days. If released to soil, 2,6-dinitrotoluene is expected to have very high to high mobility based upon measured Kocs of 19 and 72. Volatilization from moist soil surfaces is not expected be an important fate process based upon an estimated Henry's Law constant of 9.26X10-8 atm-cu m/mole. Biodegradation of 2,6-dinitrotoluene in soil may occur based on half-lives in two soils of 92 and 73 days, respectively. If released into water, 2,6-dinitrotoluene is not expected to adsorb to suspended solids and sediment in water based upon the measured Kocs. Photolysis of 2,6-dinitrotoluene may be important since the 2,4-isomer has measured half-lives of 2-43 hrs in distilled and natural water. The half-life for 2,6-dinitrotoluene in river water exposed to sunlight was 12 minutes and was determined to be an indirect photoreaction. Reported rates of biodegradation of 2,6-dinitrotoluene in water vary widely from non-detectable degradation in 28 days to 98 to 100% removal in 3 days. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. A measured BCF of 11 suggests the potential for bioconcentration in aquatic organisms is low. Hydrolysis is not expected to occur due to the lack of hydrolyzable functional groups. Occupational exposure to 2,6-dinitrotoluene may occur through inhalation and dermal contact with this compound at workplaces where 2,6-dinitrotoluene is produced or used.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	CLASS 6.1: Poisonous material.
PIN Number	UN3454
Proper Shipping Name	Dinitrotoluenes, solid DOT RQ: 100lbs., (45.4kg)
Packing Group (PG)	II
DOT Pictograms	

Continued on Next Page Emergency phone number (800) 424-9300

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
EINECS Number (EEC)	Not available.
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R45- May cause cancer. R46- May cause heritable genetic damage. R47- May cause birth defects.
Japanese Regulatory Data	ENCS No.(3)-446

Section XVI. Other Information

Version 1.0
Validated on 6/12/2006.
Printed 6/12/2006.

Notice to Reader