

## 4-NITROTOLUENE

GHS Safety Data Sheet

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NAME

4-NITROTOLUENE

#### OTHER NAMES

C7-H7-N-O2, C7-H7-N-O2, O2NC6H4CH3, "para nitrotoluene", paranitratoluol, "p methylnitrobenzene", "toluene, p-nitro", 4-methylnitrobenzene, "benzene, 1-methyl-4-nitro", 4-nitrotoluol

#### PROPER SHIPPING NAME

NITROTOLUENES, SOLID

#### PRODUCT USE

Used as laboratory reagent and for manufacture of toluidine, fuchsin and various synthetic dyes.

#### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,  
248, WORLI,

MUMBAI- 400030.INDIA.

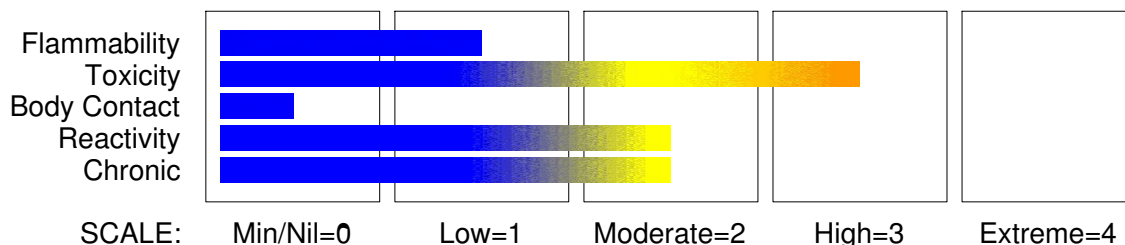
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

#### HAZARD RATINGS



### Section 2 - HAZARDS IDENTIFICATION

#### GHS Classification

Acute Toxicity (Dermal) Category 3

Acute Toxicity (Inhalation) Category 3

Acute Toxicity (Oral) Category 3

continued...

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## Section 2 - HAZARDS IDENTIFICATION

Chronic Aquatic Hazard Category 2  
Organ Damage Category 2



## EMERGENCY OVERVIEW

### HAZARD

DANGER

Determined by using GHS criteria:

H331 H311 H301 H373 H411

Toxic if inhaled

Toxic in contact with skin

Toxic if swallowed

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects

### PRECAUTIONARY STATEMENTS

#### Prevention

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear protective gloves/clothing

Avoid breathing dust/fume/gas/mist/vapours/spray.

Use only outdoors or in a well ventilated area.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

#### Response

Get medical advice/attention if you feel unwell.

Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Gently wash with plenty of soap and water.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Keep container tightly closed.

Call a POISON CENTER or doctor/physician if you feel unwell.

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

Specific treatment: refer to Label or MSDS.

Wash/Decontaminate removed clothing before reuse.

Remove/Take off immediately all contaminated clothing

#### Storage

Store locked up.

#### Disposal

Dispose of contents and container in accordance with relevant legislation.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME            | CAS RN  | %   |
|-----------------|---------|-----|
| p- nitrotoluene | 99-99-0 | >99 |

continued...

# 4-NITROTOLUENE

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## Section 4 - FIRST AID MEASURES

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### SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
  - For advice, contact a Poisons Information Centre or a doctor.
  - Urgent hospital treatment is likely to be needed.
  - In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
  - If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
  - If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.
  - Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
  - INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- NOTE: Wear a protective glove when inducing vomiting by mechanical means.

### EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

- If skin or hair contact occurs:
- Quickly but gently, wipe material off skin with a dry, clean cloth.
  - Immediately remove all contaminated clothing, including footwear.
  - Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
  - Transport to hospital, or doctor.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

### NOTES TO PHYSICIAN

Symptoms of vasodilation and reflex tachycardia may present following organic nitrate overdose; most organic nitrates are extensively metabolised by hydrolysis to inorganic nitrites. Organic nitrates and nitrites are readily absorbed through the skin, lungs, mucosa and gastro-intestinal tract.

The toxicity of nitrates and nitrites result from their vasodilating properties and their propensity to form methaemoglobin.

- Most produce a peak effect within 30 minutes.
- Clinical signs of cyanosis appear before other symptoms because of the dark

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## Section 4 - FIRST AID MEASURES

pigmentation of methaemoglobin.

- Initial attention should be directed towards improving oxygen delivery, with assisted ventilation, if necessary. Hyperbaric oxygen has not demonstrated conclusive benefits.
- Institute cardiac monitoring, especially in patients with coronary artery or pulmonary disease.
- Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- Naloxone, glucose and thiamine should be given if a multiple ingestion is suspected.
- Decontaminate using Ipecac Syrup for alert patients or lavage for obtunded patients who present within 2-4 hours of ingestion.
- Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 5 minutes; repeat, using the same dose if symptoms of hypoxia fail to subside within 1 hour.

[Ellenhorn and Barceloux: Medical Toxicology]

### BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed at the Exposure Standard (ES or TLV):

| Determinant                | Index               | Sampling Time          | Comments  |
|----------------------------|---------------------|------------------------|-----------|
| 1. Methaemoglobin in blood | 1.5% of haemoglobin | During or end of shift | B, NS, SQ |

B: Background levels occur in specimens collected from subjects NOT exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

## Section 5 - FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.

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## Section 5 - FIRE FIGHTING MEASURES

- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
- All movable parts coming in contact with this material should have a speed of less than 1-meter/sec.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material.  
May emit poisonous fumes.

### FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

### Personal Protective Equipment

- Breathing apparatus.
- Gas tight chemical resistant suit.
- Limit exposure duration to 1 BA set 30 mins.

## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

#### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:  
p-nitrotoluene      200 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take

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### Section 6 - ACCIDENTAL RELEASE MEASURES

protective action is:

p-nitrotoluene 10 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

p-nitrotoluene 6 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

p-nitrotoluene 5 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

|                 |              |           |              |
|-----------------|--------------|-----------|--------------|
| Very Toxic (T+) | $\geq 0.1\%$ | Toxic (T) | $\geq 3.0\%$ |
|-----------------|--------------|-----------|--------------|

|     |               |               |              |
|-----|---------------|---------------|--------------|
| R50 | $\geq 0.25\%$ | Corrosive (C) | $\geq 5.0\%$ |
|-----|---------------|---------------|--------------|

|     |              |  |  |
|-----|--------------|--|--|
| R51 | $\geq 2.5\%$ |  |  |
|-----|--------------|--|--|

|      |             |  |  |
|------|-------------|--|--|
| else | $\geq 10\%$ |  |  |
|------|-------------|--|--|

where percentage is percentage of ingredient found in the mixture

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X



X



+



X



X



+

+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

### Section 7 - HANDLING AND STORAGE

#### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

#### SUITABLE CONTAINER

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.

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## Section 7 - HANDLING AND STORAGE

- Packing as recommended by manufacturer.
  - Check all containers are clearly labelled and free from leaks.
- All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

### STORAGE INCOMPATIBILITY

Nitroaromatic and in particular polynitroaromatic compounds may present a severe explosion risk if subjected to shock or heated rapidly and uncontrollably as in fire situations. In addition, when such compounds are heated more moderately with caustic alkalis, even when water or organic solvents are present, there is also a risk of violent decomposition or explosion. Several industrial accidents, which probably were due to such interactions, have occurred; this potential hazard often remains unacknowledged. A range of exothermic decomposition energies for nitro compounds is given as 220-410 kJ/mol. The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment. For example, in "open vessel processes" (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in "closed vessel processes" (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g. BRETHERICK: Handbook of Reactive Chemical Hazards, 4th Edition.

Avoid reaction with oxidising agents, bases and strong reducing agents.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

The following materials had no OELs on our records

- p- nitrotoluene: CAS:99- 99- 0

### EMERGENCY EXPOSURE LIMITS

| Material        | Revised IDLH Value (mg/m3) | Revised IDLH Value (ppm) |
|-----------------|----------------------------|--------------------------|
| p- nitrotoluene |                            | 200 [Unch]               |

### MATERIAL DATA

Not available. Refer to individual constituents.

### PERSONAL PROTECTION



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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EYE

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

### HANDS/FEET

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

Wear chemical protective gloves, eg. PVC.

Wear safety footwear or safety gumboots, eg. Rubber.

### OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

### RESPIRATOR

| Protection Factor | Half- Face Respirator | Full- Face Respirator | Powered Air Respirator |
|-------------------|-----------------------|-----------------------|------------------------|
| 10 x ES           | P1 Air- line*         | - -                   | PAPR- P1 -             |
| 50 x ES           | Air- line**           | P2                    | PAPR- P2               |
| 100 x ES          | -                     | P3                    | -                      |
|                   |                       | Air- line*            | -                      |
| 100+ x ES         | -                     | Air- line**           | PAPR- P3               |

\* - Negative pressure demand \*\* - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your

Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
  - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
  - (b): filter respirators with absorption cartridge or canister of the right type;
  - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

· Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)  
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

Air Speed:

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Yellow crystals with faint aromatic odour; insoluble in water. Soluble in alcohol, acetone, benzene, ether and chloroform. Melts at 52 deg.C to form an oily liquid.

### PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Sinks in water.

Molecular Weight: 137.15

Melting Range (°C): 52

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable

Volatile Component (%vol): Not applicable

Relative Vapour Density (air=1): 4.72

Lower Explosive Limit (%): 1.6

Boiling Range (°C): 238

Specific Gravity (water=1): 1.139

pH (as supplied): Not applicable

Vapour Pressure (kPa): 0.016 @ 20C.

Evaporation Rate: Not applicable

Flash Point (°C): 106

Upper Explosive Limit (%): Not available.

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### Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Autoignition Temp (°C): 390  
State: Divided solid

Decomposition Temp (°C): Not Available  
Viscosity: Not Available

log Kow: 2.37-2.42

### Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

#### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

### Section 11 - TOXICOLOGICAL INFORMATION

#### POTENTIAL HEALTH EFFECTS

##### ACUTE HEALTH EFFECTS

##### SWALLOWED

Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia).

Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.

At about 15% concentration of blood methaemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion. At 40-60%, symptoms include weakness, dizziness, lightheadedness, increasingly severe headache, ataxia, rapid shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. Above 60% symptoms include dyspnea, respiratory depression, tachycardia or bradycardia, and convulsions. Levels exceeding 70% may be fatal.

##### EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

##### SKIN

Skin contact with the material may produce toxic effects; systemic effects may result following absorption.

The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Abrasive damage however, may result from prolonged exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

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## Section 11 - TOXICOLOGICAL INFORMATION

Reactions may not occur on exposure but response may be delayed with symptoms only appearing many hours later.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

### INHALED

Inhalation of vapours, aerosols (mists, fumes) or dusts, generated by the material during the course of normal handling, may produce toxic effects.

Inhalation hazard is increased at higher temperatures.

The material is not thought to produce respiratory irritation (as classified by EC

Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

### CHRONIC HEALTH EFFECTS

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.

There are no reports of human sensitisation.

Individuals with preexisting diseases of the cardiovascular system or bone marrow may have increased susceptibility to the toxicity of excessive exposures.

## TOXICITY AND IRRITATION

### TOXICITY

Oral (rat) LD50: 1960 mg/kg

Dermal (rat) LD50: >16000 mg/kg

### IRRITATION

Nil Reported

## Section 12 - ECOLOGICAL INFORMATION

Algae IC50 (72hr.) (mg/l): 3.3- 15  
log Pow (Verschueren 1983): 2.37/2.42

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

DO NOT discharge into sewer or waterways.

log Kow: 2.37-2.42

Koc: 464-435

Half-life (hr) air: 8

Half-life (hr) H2O surface water: 25-65

Henry's atm m<sup>3</sup>/mol: 5.00E-05

COD: 200

BCF: 20-100

Toxicity Fish: LC50(96)30mg/L

Toxicity invertebrate: cell mult. inhib.10-24mg/L

Effects on algae and plankton: cell mult. inhib. algae 1-4.4mg/L

Degradation Biological: by soil microflora >64 days

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## Section 13 - DISPOSAL CONSIDERATIONS

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- Recycle wherever possible.
  - Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
  - Dispose of by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material)
  - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
  - Containers may still present a chemical hazard/ danger when empty.
  - Return to supplier for reuse/ recycling if possible.
- Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

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## Section 14 - TRANSPORTATION INFORMATION

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Labels Required: TOXIC  
HAZCHEM: 2X

### UNDG:

|                                     |      |                |      |
|-------------------------------------|------|----------------|------|
| Dangerous Goods Class:              | 6.1  | Subrisk:       | None |
| UN Number:                          | 3446 | Packing Group: | II   |
| Shipping Name: NITROTOLUENES, SOLID |      |                |      |

### Air Transport IATA:

|                                     |      |                    |      |
|-------------------------------------|------|--------------------|------|
| ICAO/IATA Class:                    | 6.1  | ICAO/IATA Subrisk: | None |
| UN/ID Number:                       | 3446 | Packing Group:     | II   |
| ERG Code:                           | 6L   |                    |      |
| Shipping name: NITROTOLUENES, SOLID |      |                    |      |

### Maritime Transport IMDG:

|                                     |            |                |      |
|-------------------------------------|------------|----------------|------|
| IMDG Class:                         | 6.1        | IMDG Subrisk:  | None |
| UN Number:                          | 3446       | Packing Group: | II   |
| EMS Number:                         | F- A, S- A |                |      |
| Shipping name: NITROTOLUENES, SOLID |            |                |      |

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## Section 15 - REGULATORY INFORMATION

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### REGULATIONS

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## Section 15 - REGULATORY INFORMATION

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p-nitrotoluene (CAS: 99-99-0) is found on the following regulatory lists;  
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk  
International Agency for Research on Cancer (IARC) Carcinogens  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals

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## Section 16 - OTHER INFORMATION

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The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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