

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Version 7.0  
Revision Date 25.07.2024  
Print Date 13.05.2025**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**Product name : 4,*N,N*-Trimethylaniline

Product Number : 41690

Brand : Aldrich

Index-No. : 612-056-00-9

REACH No. : 01-2119956633-31-XXXX

CAS-No. : 99-97-8

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**Company : Merck Life Science Limited  
Vale Road  
Arklow  
CO WICKLOW  
Y14 EK18  
IRELAND

Telephone : +353 402-20300

E-mail address : TechnicalService@merckgroup.com

**1.4 Emergency telephone**

Emergency Phone # : +(353)-19014670 (CHEMTREC)

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Acute toxicity, (Category 3) H301: Toxic if swallowed.

Acute toxicity, (Category 2) H330: Fatal if inhaled.

Acute toxicity, (Category 3) H311: Toxic in contact with skin.

Skin sensitization, (Category 1) H317: May cause an allergic skin reaction.

Carcinogenicity, (Category 1B) H350: May cause cancer.

Reproductive toxicity, (Category 2)	H361f: Suspected of damaging fertility.
Specific target organ toxicity - repeated exposure, (Category 2), Reproductive organs	H373: May cause damage to organs through prolonged or repeated exposure if swallowed.
Long-term (chronic) aquatic hazard, (Category 3)	H412: Harmful to aquatic life with long lasting effects.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal Word

Danger

Hazard Statements

H301 + H311

Toxic if swallowed or in contact with skin.

H317

May cause an allergic skin reaction.

H330

Fatal if inhaled.

H350

May cause cancer.

H361f

Suspected of damaging fertility.

H373

May cause damage to organs (Reproductive organs) through prolonged or repeated exposure if swallowed.

H412

Harmful to aquatic life with long lasting effects.

Precautionary Statements

P202

Do not handle until all safety precautions have been read and understood.

P260

Do not breathe mist or vapors.

P273

Avoid release to the environment.

P280

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

P302 + P352 + P312

IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

Supplemental Hazard Statements

none

### Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard Statements

H330

Fatal if inhaled.

H350

May cause cancer.

H412

Harmful to aquatic life with long lasting effects.

H317

May cause an allergic skin reaction.

H361f	Suspected of damaging fertility.
H301 + H311	Toxic if swallowed or in contact with skin.
Precautionary Statements	
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist or vapors.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
Supplemental Hazard Statements	none

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : 4-Dimethylaminotoluene  
N,N-Dimethyl-p-toluidine

Formula : C<sub>9</sub>H<sub>13</sub>N  
Molecular weight : 135.21 g/mol  
CAS-No. : 99-97-8  
EC-No. : 202-805-4  
Index-No. : 612-056-00-9

Component		Classification	Concentration
<b>N,N-dimethyl-p-toluidine</b>			
CAS-No.	99-97-8	Acute Tox. 3; Acute Tox. 2; Acute Tox. 3; Skin Sens. 1; Carc. 1B; Repr. 2; STOT RE 2; Aquatic Chronic 3; H301, H330, H311, H317, H350, H361f, H373, H412	<= 100 %
EC-No.	202-805-4		
Index-No.	612-056-00-9		

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## SECTION 4: First aid measures

### 4.1 Description of 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. 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.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### Unsuitable extinguishing media

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

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

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.

### 5.3 Advice for firefighters

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

#### 5.4 Further information

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

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

#### 6.2 Environmental precautions

Do not let product enter drains.

#### 6.3 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 with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

#### 6.4 Reference to other sections

For disposal see section 13.

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### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

##### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

##### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

##### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

##### Storage conditions

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

Store under inert gas. Light sensitive. Air sensitive.

##### Storage class

Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

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

##### Skin protection

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](http://www.kcl.de)).

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

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](http://www.kcl.de)).

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.7 mm

Break through time: 30 min

Material tested: Butoject® (KCL 898)

##### Body Protection

protective clothing

##### Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

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.

##### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Physical state                               | clear, liquid  |
| b) Color  | yellow   |
| c) Odor   | unpleasant   |
| d) Melting point/freezing point                 | Melting point: -15 °C - (ECHA)   |
| e) Initial boiling point and boiling range      | 211 °C<br>90 - 92 °C at 13 hPa   |
| f) Flammability (solid, gas)                    | No data available  |
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 7 %(V)<br>Lower explosion limit: 1.2 %(V)                   |
| h) Flash point                                  | 76 °C - closed cup   |
| i) Autoignition temperature                     | No data available  |
| j) Decomposition temperature                    | No data available  |
| k) pH   | 7.44 at 25 °C  |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: 14.4 mPa.s at 35 °C |
| m) Water solubility                             | 0.65 g/l at 37 °C  |
| n) Partition coefficient: n-octanol/water       | log Pow: 1.73 at 35 °C - Bioaccumulation is not expected., (ECHA)                  |
| o) Vapor pressure                               | 0.099 hPa at 20 °C   |
| p) Density                                      | 0.930 - 0.945 g/cm <sup>3</sup>  |
| Relative density                                | No data available  |
| q) Relative vapor density                       | No data available  |
| r) Particle characteristics                     | No data available  |
| s) Explosive properties                         | Not classified as explosive.   |
| t) Oxidizing properties                         | none   |

### 9.2 Other safety information

Relative vapor density	5.42
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## SECTION 10: Stability and reactivity

### 10.1 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.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
Strong oxidizing agents  
Nitric acid  
acid halides  
Acid anhydrides  
acids

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

various plastics, Mild steel

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Mouse - 139 mg/kg  
Remarks: (ECHA)  
Acute toxicity estimate Oral - 139 mg/kg  
(ATE value derived from LD50/LC50 value)  
LC50 Inhalation - Rat - 4 h - 1.4 mg/l - vapor

Remarks: (ECHA)  
Symptoms: mucosal irritations, Cough, Shortness of breath  
Acute toxicity estimate Inhalation - 1.4 mg/l - vapor

(ATE value derived from LD50/LC50 value)  
LD50 Dermal - Rabbit - > 2,000 mg/kg  
(OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - Rabbit  
Result: No skin irritation - 4 h  
(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit  
Result: No eye irritation - 1 h



(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Patch test:

Result: positive

Remarks: (ECHA)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

**Carcinogenicity**

Presumed to have carcinogenic potential for humans

**Reproductive toxicity**

Suspected of damaging fertility.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Oral - May cause damage to organs through prolonged or repeated exposure.

- Reproductive organs

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Aspiration hazard**

No data available

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: XU5803000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

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

After absorption:

Systemic effects:

CNS disorders

Effect potentiated by: ethanol

Other information

Danger of cumulative effects.

The following applies to aromatic amines in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, and spasms, principal symptom: cyanosis (blue discolouration of the blood).

This substance should be handled with particular care.

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish                      LC50 - Pimephales promelas (fathead minnow) - 46 mg/l - 96 h  
Remarks: (ECOTOX Database)

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

#### Product:

Assessment                                      : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Notice Directive on waste 2008/98/EC.

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 2810

IMDG: 2810

IATA: 2810

### 14.2 UN proper shipping name

ADR/RID: TOXIC LIQUID, ORGANIC, N.O.S. (N,N-dimethyl-p-toluidine)

IMDG: TOXIC LIQUID, ORGANIC, N.O.S. (N,N-dimethyl-p-toluidine)

IATA: Toxic liquid, organic, n.o.s. (N,N-dimethyl-p-toluidine)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National legislation

Seveso III: Directive 2012/18/EU of the H2 ACUTE TOXIC  
European Parliament and of the Council  
on the control of major-accident hazards  
involving dangerous substances.

#### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

### Full text of H-Statements

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H330	Fatal if inhaled.
H350	May cause cancer.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H412	Harmful to aquatic life with long lasting effects.

### Relevant changes since previous version

#### 2. Hazards identification

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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