

1 Identification

Product identifier

Product name: 3-Nitrotoluene

Stock number: A17418, L08093

CAS Number:

99-08-1

EC number:

202-726-6

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H311 Toxic in contact with skin.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the lung, the kidneys, the liver, the reproductive system, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS06 GHS08

Signal word

Danger

Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

H311 Toxic in contact with skin.

H373 May cause damage to the lung, the kidneys, the liver, the reproductive system, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Precautionary statements

P280 Wear protective gloves / protective clothing.

P273 Avoid release to the environment.

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER/doctor/...

P302+P352 IF ON SKIN: Wash with plenty of water/...

WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

99-08-1 3-Nitrotoluene

Product name: 3-Nitrotoluene

Identification number(s):
EC number: 202-728-6

(Contd. of page 1)

4 First-aid measures

Description of first aid measures
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 Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed Methemoglobinemia
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Possibly Hydrogen cyanide (HCN)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: No special measures required.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: No information known.
Conditions for safe storage, including any incompatibilities
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.
Store away from strong bases.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/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:

3-Nitrotoluene	
ppm	
ACGIH TLV	2 (skin)
Austria MAK	2 (skin)
Belgium TWA	2 (skin)
Denmark TWA	2
France VME	2 (skin)
Germany MAK	5 (skin)
Korea TLV	2 (skin)
Norway TWA	1
Poland TWA	0.5; 1.6-STEL
Sweden NGV	1; 2-KTV (skin)
Switzerland MAK-W	2; 4-KZG-W (skin)
United Kingdom TWA	5; 10-STEL (skin)
USA PEL	5 (skin)

(Contd. on page 3)
USA

Product name: 3-Nitrotoluene	
(Contd. of page 2)	
Control parameters	
Components with limit values that require monitoring at the workplace:	
99-08-1 3-Nitrotoluene (100.0%)	
PEL (USA)	Long-term value: 30 mg/m ³ , 5 ppm Skin
REL (USA)	Long-term value: 11 mg/m ³ , 2 ppm Skin
TLV (USA)	Long-term value: 11 mg/m ³ , 2 ppm Skin; BEI-M
EL (Canada)	Long-term value: 2 ppm Skin
EV (Canada)	Long-term value: 11 mg/m ³ , 2 ppm Skin
Ingredients with biological limit values:	
99-08-1 3-Nitrotoluene (100.0%)	
BEI (USA)	1,5 % of hemoglobin Medium: blood Time: during or end of shift Parameter: Methemoglobin (background, nonspecific, semi-quantitative)
Additional information: No data	
Exposure controls	
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.	
Avoid contact with the eyes and skin.	
Maintain an ergonomically appropriate working environment.	
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.	
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.	
Penetration time of glove material (in minutes) Not determined	
Eye protection: Safety glasses	
Body protection: Protective work clothing.	
9 Physical and chemical properties	
Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Liquid
Color:	Yellow
Odor:	Almond-like
Odor threshold:	Not determined.
pH-value: Not determined.	
Change in condition	
Melting point/Melting range:	15-17 °C (59-63 °F)
Boiling point/Boiling range:	230-231 °C (446-448 °F)
Sublimation temperature / start:	Not determined
Flash point: 101 °C (214 °F)	
Flammability (solid, gaseous) Not applicable.	
Ignition temperature: 440 °C (824 °F)	
Decomposition temperature: Not determined	
Auto igniting: Not determined.	
Danger of explosion: Product does not present an explosion hazard.	
Explosion limits:	
Lower:	2.2 Vol %
Upper:	Not determined
Vapor pressure at 20 °C (68 °F): 0.2 hPa	
Density at 20 °C (68 °F): 1.156 g/cm ³ (9.647 lbs/gal)	
Relative density Not determined.	
Vapor density Not determined.	
Evaporation rate Not determined.	
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	0.42 g/l
Partition coefficient (n-octanol/water): Not determined.	
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Other information No further relevant information available.	
10 Stability and reactivity	
Reactivity No information known.	
Chemical stability Stable under recommended storage conditions.	
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.	
Possibility of hazardous reactions No dangerous reactions known	
Conditions to avoid No further relevant information available.	
Incompatible materials:	
Alkali metals	
Oxidizing agents	
Bases	
Hazardous decomposition products:	
Carbon monoxide and carbon dioxide	
Nitrogen oxides	
(Contd. on page 4) USA	

Product name: 3-Nitrotoluene	
Possibly Hydrogen cyanide (HCN)	(Contd. of page 3)
11 Toxicological information Information on toxicological effects Acute toxicity: Harmful if inhaled. Harmful if swallowed. Toxic in contact with skin. Danger through skin absorption. No irritation of skin (rabbit) Mild irritation of eyes (rabbit) LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: May cause irritation Eye irritation or corrosion: May cause irritation Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: IARC-3: Not classifiable as to carcinogenicity to humans. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: May cause damage to the lung, the kidneys, the liver, the reproductive system, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Other information (about experimental toxicology): Reproductive effects have been observed on tests with laboratory animals. Mutagenic effects have been observed on tests with laboratory animals. Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals: Brain and Coverings - recordings from specific areas of CNS. Liver - fatty liver degeneration. Liver - changes in liver weight. Blood - methemoglobinemia-carboxyhemoglobin. Kidney, Ureter, Bladder - changes in bladder weight. Kidney, Ureter, Bladder - proteinuria. Kidney, Ureter, Bladder - other changes in urine composition. Blood - changes in platelet count. Blood - changes in other cell count (unspecified) Related to Chronic Data - changes in testicular weight. Endocrine - changes in thymus weight. Reproductive - Maternal Effects - menstrual cycle changes or disorders. Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count). Reproductive - Paternal Effects - testes, epididymis, sperm duct. Absorption into the body may lead to the formation of methemoglobin, producing cyanosis, and marked fall in blood pressure leading to collapse, coma and possibly death. Onset may be delayed 2-4 hours or longer. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
12 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: Remark: Toxic for aquatic organisms Additional ecological information: General notes: Toxic for aquatic organisms Do not allow material to be released to the environment without proper governmental permits. 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. Toxic to aquatic life. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.	
13 Disposal considerations Waste treatment methods 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	
UN-Number DOT, IMDG, IATA	UN1664
UN proper shipping name DOT IMDG IATA	Nitrotoluenes, liquid NITROTOLUENES, LIQUID, MARINE POLLUTANT NITROTOLUENES, LIQUID
(Contd. on page 5) USA	

Product name: 3-Nitrotoluene

(Contd. of page 4)

Transport hazard class(es)

DOT

Class 6.1 Toxic substances.
Label 6.1
Class 6.1 (T1) Toxic substances
Label 6.1
IMDG


Class 6.1 Toxic substances.
Label 6.1
IATA


Class 6.1 Toxic substances.
Label 6.1

Packing group
DOT, IMDG, IATA II

Environmental hazards: Environmentally hazardous substance, liquid; Marine Pollutant
Marine pollutant (IMDG): Symbol (fish and tree)

Special precautions for user Warning: Toxic substances

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

DOT
Marine Pollutant (DOT): No
Remarks: Special marking with the symbol (fish and tree).

UN "Model Regulation": UN1664, Nitrotoluenes, liquid, 6.1, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms



GHS06 GHS08

Signal word Danger

Hazard statements
H302+H332 Harmful if swallowed or if inhaled.
H311 Toxic in contact with skin.
H373 May cause damage to the lung, the kidneys, the liver, the reproductive system, the blood and the endocrine system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Precautionary statements
P280 Wear protective gloves / protective clothing.
P273 Avoid release to the environment.
P309 IF exposed or if you feel unwell:
P310 Immediately call a POISON CENTER/doctor/...
P302+P352 IF ON SKIN: Wash with plenty of water/...

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

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.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 SDS: Global Marketing Department

Date of preparation / last revision 11/23/2015 / -

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

(Contd. on page 6)
USA

Product name: 3-Nitrotoluene	
<div>IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent vPvB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)</div>	<div>(Contd. of page 5)</div> <div>USA</div>