

1 Identification

Product identifier

Product name: 2-Nitropropane

Stock number: A16206, L03269

CAS Number:
79-46-9

EC number:
201-209-1

Index number:
609-002-00-1

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)



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS08 Health hazard

Carc. 1A H350 May cause cancer.



GHS07

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



GHS02 GHS06 GHS08

Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.

H301 Toxic if swallowed.

H332 Harmful if inhaled.

H350 May cause cancer.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

B2 - Flammable liquid

D2A - Very toxic material causing other toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 3 Flammability = 3

REACTIVITY 1 Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

Product name: 2-Nitropropane	
vPvB: Not applicable.	(Contd. of page 1)
3 Composition/information on ingredients Chemical characterization: Substances CAS# Description: 79-46-9 2-Nitropropane Identification number(s): EC number: 201-209-1 Index number: 609-002-00-1	
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 No further relevant information available. 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) 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 Keep away from ignition sources Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Keep away from ignition sources. 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: Keep away from ignition sources. 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. Open and handle container with care. Information about protection against explosions and fires: Protect against electrostatic charges. Fumes can combine with air to form an explosive mixture. Keep ignition sources away. 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. 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:	

Product name: 2-Nitropropane

(Contd. of page 2)

2-Nitropropane			
ACGIH TLV	ppm	10; Confirmed animal carcinogen with unknown	
Austria	Carcinogen		
Denmark TWA	5		
France	Carcinogen		
Korea TLV	10; Confirmed animal carcinogen with unknown	Netherlands MAC-TGG	25
Norway TWA	10		
Sweden NGV	5; 10-TGV		
Switzerland MAK-W	5; Carcinogen		
United Kingdom TWA	5; Carcinogen		
USA PEL	25		

Control parameters

Components with limit values that require monitoring at the workplace:

79-46-9 2-Nitropropane (100.0%)

PEL (USA)	Long-term value: 90 mg/m³, 25 ppm
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 36 mg/m³, 10 ppm
EL (Canada)	Long-term value: 5 ppm
	IARC 2B
EV (Canada)	Short-term value: 70 mg/m³, 20 ppm
	Long-term value: 35 mg/m³, 10 ppm

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.

Store protective clothing separately.

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.

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:	Colorless
Odor:	Not determined
Odor threshold:	Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	119-121 °C (246-250 °F)
Sublimation temperature / start:	Not determined

Flash point:	37 °C (99 °F)
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.

Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

Explosion limits:

Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20 °C (68 °F):	0.992 g/cm³ (8.278 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Slightly soluble
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: Oxidizing agents




Hazardous decomposition products:

Carbon monoxide and carbon dioxide

(Contd. on page 4)

Product name: 2-Nitropropane	
Nitrogen oxides	
(Contd. of page 3)	
11 Toxicological information	
<p>Information on toxicological effects</p> <p>Acute toxicity:</p> <p>Harmful if inhaled.</p> <p>Toxic if swallowed.</p> <p>LD/LC50 values that are relevant for classification: No data</p> <p>Skin irritation or corrosion: Irritant to skin and mucous membranes.</p> <p>Eye irritation or corrosion: Irritating effect.</p> <p>Sensitization: No sensitizing effects known.</p> <p>Germ cell mutagenicity: No effects known.</p> <p>Carcinogenicity:</p> <p>May cause cancer.</p> <p>IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.</p> <p>NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.</p> <p>ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans.</p> <p>Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.</p> <p>Reproductive toxicity: No effects known.</p> <p>Specific target organ system toxicity - repeated exposure: No effects known.</p> <p>Specific target organ system toxicity - single exposure: No effects known.</p> <p>Aspiration hazard: No effects known.</p> <p>Other information (about experimental toxicology):</p> <p>Tumorigenic effects have been observed on tests with laboratory animals.</p> <p>Reproductive effects have been observed on tests with laboratory animals.</p> <p>Mutagenic effects have been observed on tests with bacteria.</p> <p>Mutagenic effects have been observed on tests with human lymphocytes.</p> <p>Mutagenic effects have been observed on tests with laboratory animals.</p> <p>Mutagenic effects have been observed on tests with mammals.</p> <p>Subacute to chronic toxicity:</p> <p>The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:</p> <p>Behavioral - anorexia (human).</p> <p>Behavioral - somnolence (general depressed activity).</p> <p>Behavioral - ataxia.</p> <p>Behavioral - convulsions or effect on seizure threshold.</p> <p>Gastrointestinal - hypermotility, diarrhea.</p> <p>Gastrointestinal - nausea or vomiting.</p> <p>Gastrointestinal - changes in structure or function of salivary glands.</p> <p>Blood - methemoglobinemia-carboxyhemoglobin.</p> <p>Sense Organs and Special Senses (Eye) - lacrimation.</p> <p>Liver - tumors.</p> <p>Lungs, Thorax, or Respiration - dyspnea.</p> <p>Lungs, Thorax, or Respiration - cyanosis.</p> <p>Lungs, Thorax, or Respiration - respiratory stimulation.</p> <p>Reproductive - Specific Developmental Abnormalities - cardiovascular (circulatory) system.</p> <p>Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).</p> <p>Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).</p> <p>Tumorigenic - carcinogenic by RTECS criteria.</p> <p>Tumorigenic - equivocal tumorigenic agent by RTECS criteria.</p> <p>Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.</p>	
12 Ecological information	
<p>Toxicity</p> <p>Aquatic toxicity: No further relevant information available.</p> <p>Persistence and degradability No further relevant information available.</p> <p>Bioaccumulative potential No further relevant information available.</p> <p>Mobility in soil No further relevant information available.</p> <p>Additional ecological information:</p> <p>General notes:</p> <p>Do not allow material to be released to the environment without proper governmental permits.</p> <p>Do not allow product to reach ground water, water course or sewage system, even in small quantities.</p> <p>Danger to drinking water if even extremely small quantities leak into the ground.</p> <p>Avoid transfer into the environment.</p> <p>Results of PBT and vPvB assessment</p> <p>PBT: Not applicable.</p> <p>vPvB: Not applicable.</p> <p>Other adverse effects No further relevant information available.</p>	
13 Disposal considerations	
<p>Waste treatment methods</p> <p>Recommendation Consult state, local or national regulations to ensure proper disposal.</p> <p>Uncleaned packagings:</p> <p>Recommendation: Disposal must be made according to official regulations.</p>	
14 Transport information	
UN-Number DOT, IMDG, IATA	UN2608
UN proper shipping name DOT IMDG, IATA	Nitropropanes NITROPROPANES
Transport hazard class(es) DOT	
Class	
(Contd. on page 5) - USA -	

Product name: 2-Nitropropane	
(Contd. of page 4)	
Label Class Label IMDG, IATA	3 3 (F1) Flammable liquids 3
	
Class Label	3 Flammable liquids. 3
Packing group DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Flammable liquids
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN2608, Nitropropanes, 3, III

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	
  	
GHS02 GHS06 GHS08	
Signal word Danger	
Hazard statements	
H226 Flammable liquid and vapour.	
H301 Toxic if swallowed.	
H332 Harmful if inhaled.	
H350 May cause cancer.	
Precautionary statements	
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.	
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.	
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...	
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.	
P405 Store locked up.	
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.	
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)	
79-46-9 2-Nitropropane	
California Proposition 65	
Prop 65 - Chemicals known to cause cancer	
79-46-9 2-Nitropropane	
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:	
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.	
For use only by technically qualified individuals.	
This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721.	
This product is being sold for research and development use.	
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:	
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)	
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)	