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Material Safety Data Sheet

1-Nitropropane

Section 1: Chemical Product and Company Identification

Molecular formula: C₃H₇NO₂

CAS Nr: 108-03-2

EINECS:203-544-9

Molecular weight:89.09

Synonyms: 1-NITROPROPANE

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
1-Nitropropane	108-03-2	100

Section 3: Hazards Identification

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 4), H312

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements

Pictogram

Signal word	Danger
Hazard statement(s)	
H226	Flammable liquid and vapour.
H302 + H312	Harmful if swallowed or in contact with skin
H331	Toxic if inhaled.
Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.	
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P311	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403+ P233	Store in a well-ventilated place. Keep container tightly closed.
P403+ P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.
Hazards not otherwise classified (HNOC) or not covered by GHS - none	

Section 4: First Aid Measures

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Indication of any immediate medical attention and special treatment needed

No data available

Section 5: Firefighting measures

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary

Further information

Use water spray to cool unopened containers.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations.

Vapours can accumulate in low areas.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections

For disposal see section 13.

Section 7: Handling and Storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage class (TRGS 510): Flammable liquids

Specific end use(s)

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

Section 8: Exposure Controls/Personal Protection

Control parameters				
Components with workplace control parameters				
Component	CAS-No.	Value	Control parameters	Basis
1-Nitropropane	108-03-2	TWA	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Liver damage Not classifiable as a human carcinogen		
		TWA	25.000000 ppm 90.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
			The value in mg/m3 is approximate.	
		TWA	25.000000 ppm 90.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	25 ppm 90 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Exposure controls				
Appropriate engineering controls				
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.				
Personal protective equipment				
Eye/face protection				
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).				
Skin protection				
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.				
Full contact				
Material: butyl-rubber				
Minimum layer thickness: 0.3 mm				
Break through time: 480 min				
Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)				
Splash contact				
Material: butyl-rubber				
Minimum layer thickness: 0.3 mm				

Break through time: 60 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.

If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

a) Appearance	Form: liquid Colour: colourless
b) Odour	mild
c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: -103.99 ° C (-155.18 ° F)
f) Initial boiling point and boiling range	131 - 132 ° C (268 - 270 ° F) - lit.
g) Flash point	35 ° C (95 ° F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Lower explosion limit: 2.2 %(V)
k) Vapour pressure	13.64 hPa (10.23 mmHg) at 25 ° C (77 ° F)
l) Vapour density	3.08 - (Air = 1.0)
m) Relative density	0.998 g/cm ³ at 25 ° C (77 ° F)
n) Water solubility	15 g/l at 25 ° C (77 ° F) - soluble
o) Partition coefficient: noctanol/water	log Pow: 0.79 at 22 ° C (72 ° F)
p) Auto-ignition temperature	> 400 ° C (> 752 ° F) at 1,012.10 hPa (759.14 mmHg)
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	Not explosive
t) Oxidizing properties	No data available
Other safety information	
Surface tension	67.2 mN/m at 21.6 ° C (70.9 ° F)
Relative vapour density	3.08 - (Air = 1.0)

Section 10: Stability and Reactivity Data

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks.

Incompatible materials

Strong oxidizing agents, Strong bases

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)

Other decomposition products - No data available

In the event of fire: see section 5

Section 11: Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 506 mg/kg

LC50 Inhalation - Rat - female - 1 h - 11.02 mg/l

Dermal: No data available

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Respiratory or skin sensitisation

in vivo assay - Guinea pig

Result: Does not cause skin sensitisation.

Germ cell mutagenicity

Hamster

Lungs

Result: negative

OECD Test Guideline 486

Rat - male and female

Result: negative

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

<p>No data available</p> <p>Specific target organ toxicity - repeated exposure</p> <p>No data available</p> <p>Aspiration hazard</p> <p>No data available</p> <p>Additional Information</p> <p>Repeated dose toxicity</p> <p>Rat - male and female - Inhalation - NOAEL : 0.17 mg/l</p> <p>RTECS: TZ5075000</p> <p>Liver injury may occur., Kidney injury may occur., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.</p> <p>Stomach - Irregularities - Based on Human Evidence</p> <p>Stomach - Irregularities - Based on Human Evidence</p>
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Section 12: Ecological Information

Toxicity	
Toxicity to fish	flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 227 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 380 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata - 345 mg/l - 96 h
Toxicity to bacteria	Respiration inhibition EC50 - Sludge Treatment - 310 mg/l - 30 h (OECD Test Guideline 209)
Persistence and degradability	
Biodegradability	aerobic - Exposure time 28 d Result: 18 % - Not readily biodegradable. (OECD Test Guideline 301F)
Bioaccumulative potential	
No data available	
Mobility in soil	
No data available	
Results of PBT and vPvB assessment	
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted	
Other adverse effects	

Section 13: Disposal Considerations

Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this

material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

Section 14: Transport Information

DOT Classification: Class 3: Flammable liquid.

Identification: : Nitroethane : UN 2608 3/PG 3

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

1-Nitropropane	CAS-No.	Revision Date
	108-03-2	1993-04-24

Pennsylvania Right To Know Components

1-Nitropropane	CAS-No.	Revision Date
	108-03-2	1993-04-24

New Jersey Right To Know Components

1-Nitropropane	CAS-No	Revision Date
	108-03-2	1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 11:01 AM

Last Updated: 05/21/2013 12:00 PM

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