

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)



Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical

- : Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

- : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters

- : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

- : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

- : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

- : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

- : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



Section 6. Accidental release measures

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid breathing gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
propan-1-ol	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 200 ppm 8 hours. TWA: 500 mg/m³ 8 hours. STEL: 250 ppm 15 minutes. STEL: 625 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 200 ppm 8 hours. TWA: 500 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 3/2016). TWA: 100 ppm 8 hours.</p>
n-hexane	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 50 ppm 8 hours. TWA: 180 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 3/2016). Absorbed through skin. TWA: 50 ppm 8 hours.</p> <p>OSHA PEL (United States, 6/2016). TWA: 500 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Isopropyl alcohol	<p>ACGIH TLV (United States, 3/2016). TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 400 ppm 8 hours. TWA: 980 mg/m³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 2/2013). TWA: 400 ppm 8 hours.</p>



Section 8. Exposure controls/personal protection

nonane

TWA: 980 mg/m³ 8 hours.
ACGIH TLV (United States, 3/2016).
 TWA: 200 ppm 8 hours.
 TWA: 1050 mg/m³ 8 hours.
OSHA PEL 1989 (United States, 3/1989).
 TWA: 200 ppm 8 hours.
 TWA: 1050 mg/m³ 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties



Section 9. Physical and chemical properties

Physical state	Liquid. [Aerosol.]	Color	Colorless
Odor	Characteristic.	Odor threshold	Not available.
pH	Not available.	Melting point	Not available.
Boiling point	Not available.	Flash point	Closed cup: -104°C (-155.2°F) [Pensky-Martens]
Burning time	Not applicable.	Burning rate	Not applicable.
Evaporation rate	Not available.	Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.	Vapor pressure	551.6 to 620.5 kPa (4137 to 4654 mm Hg) [room temperature]
Vapor density	Not available.	Relative density	0.67
Solubility	Insoluble in the following materials: cold water.	Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not available.	Auto-ignition temperature	Not available.
Decomposition temperature	Not available.	SADT	Not available.
Viscosity	Not available.	Volatility	98.47

Lower and upper explosive (flammable) limits

nonane	Lower: 0.8% Upper: 2.9%
Naphtha (petroleum), hydrotreated light	Lower: 1.05% Upper: 7.6%
n-hexane	Lower: 1.1% Upper: 7.5%
Petroleum gases, liquefied, sweetened	Lower: 1.8% Upper: 8.4%
Isopropyl alcohol	Lower: 2% Upper: 12%
propan-1-ol	Lower: 2.1% Upper: 13.5%

Aerosol product

Type of aerosol	Spray	Heat of combustion	13.86 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Incompatible materials	: No specific data.



Section 10. Stability and reactivity

Hazardous decomposition products : Hydrogen fluoride may be evolved at elevated temperatures.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
propan-1-ol	LD50 Dermal	Rabbit	5040 mg/kg	-
	LD50 Oral	Rat	1870 mg/kg	-
n-hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
Isopropyl alcohol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
nonane	LC50 Inhalation Gas.	Rat	3200 ppm	4 hours
	LC50 Inhalation Vapor	Rat	17000 mg/m ³	4 hours

Irritation/Corrosion : Causes serious eye damage. Causes skin irritation.

Sensitization : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Carcinogenicity :

Reproductive toxicity : Suspected of damaging fertility.

Teratogenicity : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Name	Target organs
Light aliphatic naphtha	Narcotic effects
propan-1-ol	Narcotic effects
n-hexane	Narcotic effects
Isopropyl alcohol	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Target organs
n-hexane	Not determined

Aspiration hazard

Name	Result
Light aliphatic naphtha	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1
nonane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics



Section 11. Toxicological information

Eye contact

Adverse symptoms may include the following:
pain
watering
redness

Inhalation

Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact

Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion

Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	58201.6 mg/kg
Inhalation (gases)	38942.4 ppm
Inhalation (vapors)	26.47 mg/l

Section 12. Ecological information

No known significant effects or critical hazards.



Section 13. Disposal considerations

- Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.
- RCRA classification** : D001 Because of its ignitability if the product is disposed of in its original form.

Section 14. Transport information

	DOT Classification	Bulk	TDG Classification	IATA	IMDG
UN number	-	-	UN1950	UN1950	UN1950
UN proper shipping name	Consumer commodity	Consumer commodity	AEROSOLS	Aerosols, flammable	AEROSOLS
Transport hazard class(es)	ORM-D	ORM-D	2.1	2.1	2.1
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	<p>Reportable quantity 46816.5 lbs / 21254.7 kg [8380.4 gal / 31723.4 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity limitation:</p>		<p>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).</p> <p>Explosive Limit and Limited Quantity Index 1</p> <p>Passenger Carrying Road or Rail Index 75</p>	<p>Passenger and Cargo Aircraft Quantity limitation: 75 kg Packaging instructions: 203</p> <p>Cargo Aircraft Only Quantity limitation: 150 kg Packaging instructions: 203</p> <p>Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y203</p> <p>Special provisions A145, A167, A802</p>	<p>Emergency schedules (EmS) F-D, S-U</p> <p>Special provisions 63, 190, 277, 327, 959, 344</p>



Section 14. Transport information

	30 kg				
	Cargo aircraft Quantity limitation: 30 kg				

Emergency Response Guidebook (ERG): 126

Section 15. Regulatory information

International lists :

Australia inventory (AICS)	All components are listed or exempted.
Canada inventory (DSL/NDSL)	At least one component is not listed.
China inventory (IECSC)	All components are listed or exempted.
Europe inventory (EINECS)	At least one component is not listed.
Japan inventory	Japan inventory (ENCS): All components are listed or exempted. Japan inventory (ISHL): Not determined.
Korea inventory (KECI)	All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.
United States inventory (TSCA 8b)	All components are listed or exempted.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)

Ingredient name	Status
n-hexane	Listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Sudden release of pressure
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	n-hexane Isopropyl alcohol	110-54-3 67-63-0	≥10 - ≤25 ≤10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class B-5: Flammable aerosol.
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).



Section 15. Regulatory information

State regulations

- Massachusetts** : The following components are listed: NONANE; PROPYL ALCOHOL; PROPANOL; ISOPROPYL ALCOHOL; 2-PROPANOL; HEXANE; N-HEXANE
- New York** : The following components are listed: Hexane
- New Jersey** : The following components are listed: NONANE; PROPYL ALCOHOL; 1-PROPANOL; ETHYL ALCOHOL; ALCOHOL; ISOPROPYL ALCOHOL; 2-PROPANOL; n-HEXANE; HEXANE
- Pennsylvania** : The following components are listed: NONANE; 1-PROPANOL; DENATURED ALCOHOL; ETHANOL; ISOPROPYL ALCOHOL MANUFACTURE (STRONG-ACID PROCESS); HEXANE

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
toluene	No.	Yes.	No.	7000 µg/day (ingestion)
ethylbenzene	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
methanol	No.	Yes.	No.	23000 µg/day (ingestion) 47000 µg/day (inhalation)
4-methylpentan-2-one	Yes.	Yes.	No.	No.
benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
naphthalene	Yes.	No.	Yes.	No.
acetaldehyde	Yes.	No.	90 µg/day (inhalation)	No.

U.S. Federal regulations

TSCA 5(a)2 final significant new use rules: Poly(difluoromethylene), .alpha.-(cyclohexylmethyl)-.omega.-hydro-

TSCA 12(b) one-time export: nonane

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * Flammability : 4 Physical hazards : 0 Personal protection Code : H

National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 4 Instability/Reactivity : 0 Special : -

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Section 16. Other information

Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

▣ Indicates information that has changed from previously issued version.

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