



MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 10/6/2015 Revision date: 9/18/2023 Supersedes: 1/28/2019 Version: 3.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE
Product code : ECN-5558

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 3	H226	Flammable liquid and vapor
Acute toxicity (inhalation:vapor) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways
Hazardous to the aquatic environment – Acute Hazard Category 1	H400	Very toxic to aquatic life
Hazardous to the aquatic environment – Chronic Hazard Category 1	H410	Very toxic to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation

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Precautionary statements (GHS US)	<p>H332 - Harmful if inhaled H336 - May cause drowsiness or dizziness H410 - Very toxic to aquatic life with long lasting effects</p> <p>: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks P233 - Keep container tightly closed. P240 - Ground/Bond container and receiving equipment. P241 - Use explosion-proof electrical, lighting, ventilating equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P261 - Avoid breathing fume, mist, spray, vapors. P264 - Wash hands, forearms and face thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P280 - Wear protective clothing, protective gloves. P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER. P302+P352 - If on skin: Wash with plenty of water. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 - Call a doctor, a POISON CENTER if you feel unwell. P321 - Specific treatment (see Hazardous component(s) for labeling on this label). P331 - Do NOT induce vomiting. P332+P313 - If skin irritation occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish. P391 - Collect spillage. 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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.</p>
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2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

Name	Product identifier	%	GHS US classification
N-NONANE UNLABELED	CAS-No.: 111-84-2	99.99833	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
2-MONOCN UNLABELED	CAS-No.: 91-58-7	0.00014	Aquatic Acute 2, H401 Aquatic Chronic 2, H411
1,2-DICN UNLABELED	CAS-No.: 2050-69-3 (Unlabeled)	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
1,2,3-TRICN UNLABELED	CAS-No.: 50402-52-3	0.00014	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
1,4,5,8-TETRACN UNLABELED	CAS-No.: 3432-57-3	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2,3,5,7-PENTACN UNLABELED	CAS-No.: 53555-65-0	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT RE 1, H372 STOT RE 2, H373 Aquatic Chronic 1, H410
1,2,3,5,8-PENTACN UNLABELED	CAS-No.: 150224-24-1	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2,3,4,6,7-HEXACN UNLABELED	CAS-No.: 103426-96-6	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT RE 1, H372 STOT RE 2, H373 Aquatic Chronic 1, H410
1,2,3,5,6,8-HEXACN UNLABELED	CAS-No.: 103426-95-5 (Unlabeled)	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT RE 1, H372 STOT RE 2, H373 Aquatic Chronic 1, H410

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Name	Product identifier	%	GHS US classification
1,2,3,4,5,6,7-HEPTACN UNLABELED	CAS-No.: 58863-14-2	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT RE 1, H372 STOT RE 2, H373 Aquatic Chronic 1, H410
OCTACN UNLABELED	CAS-No.: 2234-13-1	0.00014	Acute Tox. 4 (Oral), H302 Aquatic Chronic 4, H413
1,4-DICN UNLABELED	CAS-No.: 1825-31-6	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED	CAS-No.: 2437-54-9 (Unlabeled)	0.00014	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
1,3,5,7-TETRACN UNLABELED	CAS-No.: 53555-64-9	0.00014	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice. Evacuate danger area.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May be harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Wear personal protective equipment. Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing fume, gas, mist, spray, vapors. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Dike and contain spill. Dispose as hazardous waste. Comply with local regulations for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. This material and its container must be disposed of in a safe way, and as per local legislation.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Store in a well-ventilated place. Keep container tightly closed. Keep dry. Ground/bond container and receiving equipment.
Storage conditions	: Store at room temperature away from light and moisture.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE	
No additional information available	
N-NONANE UNLABELED (111-84-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Nonane
ACGIH OEL TWA [ppm]	200 ppm USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	CNS impair
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	1050 mg/m ³ USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
OSHA PEL TWA [2]	200 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
OSHA PEL C	1050 California permissible exposure limits for chemical contaminants.
OSHA PEL C [ppm]	200 ppm California permissible exposure limits for chemical contaminants.
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	1050 mg/m ³ USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	200 ppm USA. NIOSH Recommended Exposure Limits
Remark (NIOSH)	Central Nervous System impairment
2-MONOCN UNLABELED (91-58-7)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
1,2-DICN UNLABELED (2050-69-3 (Unlabeled))	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
1,2,3-TRICN UNLABELED (50402-52-3)	
No additional information available	

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1,4,5,8-TETRACN UNLABELED (3432-57-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
1,2,3,5,7-PENTACN UNLABELED (53555-65-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0.5 mg/m ³ Skin
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	0.5 mg/m ³ Skin
1,2,3,5,8-PENTACN UNLABELED (150224-24-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)	
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	0.2 mg/m ³ Skin
1,2,3,5,6,8-HEXACN UNLABELED (103426-95-5 (Unlabeled))	
No additional information available	
1,2,3,4,5,6,7-HEPTACN UNLABELED (58863-14-2)	
No additional information available	
OCTACN UNLABELED (2234-13-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
1,4-DICN UNLABELED (1825-31-6)	
No additional information available	
1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED (2437-54-9 (Unlabeled))	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
1,3,5,7-TETRACN UNLABELED (53555-64-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Protective clothing. Protective goggles. Gloves. Self-contained breathing apparatus.

Materials for protective clothing:

Wear suitable protective clothing and gloves

Hand protection:

protective gloves

Eye protection:

Chemical goggles or face shield. Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing, gloves and eye/face protection

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Approved respirator

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: -53 °C (- 63 °F) - lit
Boiling point	: 151 °C (304 °F) - lit
Flash point	: 31 °C (87.8 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: 5.69 hPa (4.27 mmHg) at 25 °C (77 °F)
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 0.718 g/ml at 25 °C (77 °F)
Molecular mass	: 128.3 g/mol
Solubility	: Water: 0.0002 %
Partition coefficient n-octanol/water (Log Pow)	: 5.65
Auto-ignition temperature	: 205 °C (401 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: ≤ 1.008 mm ² /s at 20 °C (68 °F)
Viscosity, dynamic	: No data available

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Explosion limits : 0.87 – 2.9 % (V)
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE	
ATE US (vapors)	11 mg/l/4h
N-NONANE UNLABELED (111-84-2)	
LC50 Inhalation - Rat	23760 mg/m ³ male - 4 h
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative
2-MONOCN UNLABELED (91-58-7)	
LD50 oral rat	2078 mg/kg

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2-MONOCN UNLABELED (91-58-7)	
ATE US (oral)	2078 mg/kg body weight
1,2-DICN UNLABELED (2050-69-3 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,4,5,8-TETRACN UNLABELED (3432-57-3)	
ATE US (oral)	500 mg/kg body weight
1,2,3,5,7-PENTACN UNLABELED (53555-65-0)	
ATE US (oral)	500 mg/kg body weight
1,2,3,5,8-PENTACN UNLABELED (150224-24-1)	
ATE US (oral)	500 mg/kg body weight
1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)	
ATE US (oral)	500 mg/kg body weight
1,2,3,5,6,8-HEXACN UNLABELED (103426-95-5 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,4,5,6,7-HEPTACN UNLABELED (58863-14-2)	
ATE US (oral)	500 mg/kg body weight
OCTACN UNLABELED (2234-13-1)	
ATE US (oral)	500 mg/kg body weight
1,4-DICN UNLABELED (1825-31-6)	
ATE US (oral)	500 mg/kg body weight
1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED (2437-54-9 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,3,5,7-TETRACN UNLABELED (53555-64-9)	
ATE US (oral)	500 mg/kg body weight
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause drowsiness or dizziness.
N-NONANE UNLABELED (111-84-2)	
STOT-single exposure	May cause drowsiness or dizziness.
1,2-DICN UNLABELED (2050-69-3 (Unlabeled))	
STOT-single exposure	May cause drowsiness or dizziness.
1,2,3-TRICN UNLABELED (50402-52-3)	
STOT-single exposure	May cause respiratory irritation.

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1,4-DICN UNLABELED (1825-31-6)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified
1,4,5,8-TETRACN UNLABELED (3432-57-3)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
1,2,3,5,7-PENTACN UNLABELED (53555-65-0)	
STOT-repeated exposure	Causes damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral). May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, oral, Inhalation).
1,2,3,5,8-PENTACN UNLABELED (150224-24-1)	
STOT-repeated exposure	May cause damage to organs (Skin, liver) through prolonged or repeated exposure (oral, Inhalation, Dermal).
1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)	
STOT-repeated exposure	Causes damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral). May cause damage to organs (Skin, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
1,2,3,5,6,8-HEXACN UNLABELED (103426-95-5 (Unlabeled))	
STOT-repeated exposure	Causes damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral). May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
1,2,3,4,5,6,7-HEPTACN UNLABELED (58863-14-2)	
STOT-repeated exposure	Causes damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral). May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
1,3,5,7-TETRACN UNLABELED (53555-64-9)	
STOT-repeated exposure	May cause damage to organs (Skin, liver) through prolonged or repeated exposure (oral, Inhalation, Dermal).
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: $\leq 1.008 \text{ mm}^2/\text{s}$ at 20 °C (68 °F)
N-NONANE UNLABELED (111-84-2)	
Viscosity, kinematic	$\leq 1.008 \text{ mm}^2/\text{s}$ at 20 °C (68 °F)
1,4-DICN UNLABELED (1825-31-6)	
Viscosity, kinematic	Not applicable
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May be harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

2-MONOCN UNLABELED (91-58-7)

EC50 - Crustacea [1]	1.64 mg/l Daphnia magna (Water flea) - 48 h
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OCTACN UNLABELED (2234-13-1)

LC50 - Fish [1]	> 600 mg/l Lepomis macrochirus (Bluegill) - 96 h
EC50 - Crustacea [1]	> 530 mg/l Daphnia magna (Water flea) - 48 h
ErC50 algae	> 500 mg/l Pseudokirchneriella subcapitata (green algae) - 72 h
NOEC (chronic)	560 mg/l Cyprinodon variegatus (sheepshead minnow) - 96 h

12.2. Persistence and degradability

1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)

Persistence and degradability	No data available.
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1,4-DICN UNLABELED (1825-31-6)

Persistence and degradability	May cause long-term adverse effects in the environment.
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1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED (2437-54-9 (Unlabeled))

Persistence and degradability	Not available.
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12.3. Bioaccumulative potential

MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE

Partition coefficient n-octanol/water (Log Pow)	5.65
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N-NONANE UNLABELED (111-84-2)

Partition coefficient n-octanol/water (Log Pow)	5.65
Bioaccumulative potential	Indication of bioaccumulation.

1,2,3,5,7-PENTACN UNLABELED (53555-65-0)

Partition coefficient n-octanol/water (Log Pow)	6.88
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1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)

Partition coefficient n-octanol/water (Log Pow)	6.88
Bioaccumulative potential	No data available.

1,2,3,5,6,8-HEXACN UNLABELED (103426-95-5 (Unlabeled))

Partition coefficient n-octanol/water (Log Pow)	6.88
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1,2,3,4,5,6,7-HEPTACN UNLABELED (58863-14-2)

Partition coefficient n-octanol/water (Log Pow)	6.88
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OCTACN UNLABELED (2234-13-1)

Partition coefficient n-octanol/water (Log Pow)	6.42
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1,4-DICN UNLABELED (1825-31-6)	
Partition coefficient n-octanol/water (Log Kow)	4.8
1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED (2437-54-9 (Unlabeled))	
Partition coefficient n-octanol/water (Log Pow)	5.314
Bioaccumulative potential	Not available.

12.4. Mobility in soil

1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)	
Ecology - soil	No data available.
1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED (2437-54-9 (Unlabeled))	
Ecology - soil	Not available.

12.5. Other adverse effects

Other adverse effects : Disposal must be done according to official regulations. Avoid release to the environment. Environmental precautions.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN1920

UN-No. (TDG) : UN1920

UN-No. (IMDG) : 1920

UN-No. (IATA) : 1920

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nonanes

Proper Shipping Name (TDG) : NONANES

Proper Shipping Name (IMDG) : NONANES

Proper Shipping Name (IATA) : Nonanes

14.3. Transport hazard class(es)

DOT

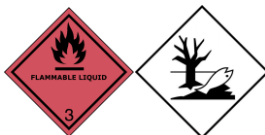
Transport hazard class(es) (DOT) : 3

Hazard labels (DOT) : 3

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TDG

Transport hazard class(es) (TDG) : 3

Hazard labels (TDG) : 3



IMDG

Transport hazard class(es) (IMDG) : 3

Hazard labels (IMDG) : 3



IATA

Transport hazard class(es) (IATA) : 3

Hazard labels (IATA) : 3



14.4. Packing group

Packing group (DOT) : III

Packing group (TDG) : III

Packing group (IMDG) : III

Packing group (IATA) : III

14.5. Environmental hazards

Dangerous for the environment : Yes

Marine pollutant : Yes



Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1920

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DOT Special Provisions (49 CFR 172.102)	: B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3) TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
TDG	
UN-No. (TDG)	: UN1920
Explosive Limit and Limited Quantity Index	: 5 L
Excepted quantities (TDG)	: E1
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: 60 L
Emergency Response Guide (ERG) Number	: 128
IMDG	
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T2
Tank special provisions (IMDG)	: TP1
EmS-No. (Fire)	: F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage)	: S-E - SPILLAGE SCHEDULE Echo - FLAMMABLE LIQUIDS, FLOATING ON WATER
Stowage category (IMDG)	: A
Flash point (IMDG)	: '
Properties and observations (IMDG)	: Colourless liquids. Explosive limits: 0.8% to 2.9% normal-NONANE: flashpoint 31°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.
MFAG-No	: 128
IATA	
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y344
PCA limited quantity max net quantity (IATA)	: 10L
PCA packing instructions (IATA)	: 355
PCA max net quantity (IATA)	: 60L

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CAO packing instructions (IATA) : 366
CAO max net quantity (IATA) : 220L
ERG code (IATA) : 3L

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
N-NONANE UNLABELED	111-84-2	Present	Active	T
2-MONOCN UNLABELED	91-58-7	Present	Active	SP
1,2-DICN UNLABELED	2050-69-3 (Unlabeled)	Not present	-	
1,2,3-TRICN UNLABELED	50402-52-3	Not present	-	
1,4,5,8-TETRACN UNLABELED	3432-57-3	Not present	-	
1,2,3,5,7-PENTACN UNLABELED	53555-65-0	Not present	-	
1,2,3,5,8-PENTACN UNLABELED	150224-24-1	Not present	-	
1,2,3,4,6,7-HEXACN UNLABELED	103426-96-6	Not present	-	
1,2,3,5,6,8-HEXACN UNLABELED	103426-95-5 (Unlabeled)	Not present	-	
1,2,3,4,5,6,7-HEPTACN UNLABELED	58863-14-2	Not present	-	
OCTACN UNLABELED	2234-13-1	Present	Active	SP
1,4-DICN UNLABELED	1825-31-6	Present	Inactive	SP
1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED	2437-54-9 (Unlabeled)	Not present	-	
1,3,5,7-TETRACN UNLABELED	53555-64-9	Not present	-	

N-NONANE UNLABELED (111-84-2)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

2-MONOCN UNLABELED (91-58-7)

Not subject to reporting requirements of the United States SARA Section 313

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2-MONOCN UNLABELED (91-58-7)	
CERCLA RQ	5000 lb

1,2-DICN UNLABELED (2050-69-3 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1,2,3-TRICN UNLABELED (50402-52-3)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

1,4,5,8-TETRACN UNLABELED (3432-57-3)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1,2,3,5,7-PENTACN UNLABELED (53555-65-0)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

1,2,3,5,8-PENTACN UNLABELED (150224-24-1)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

1,2,3,5,6,8-HEXACN UNLABELED (103426-95-5 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

1,2,3,4,5,6,7-HEPTACN UNLABELED (58863-14-2)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

OCTACN UNLABELED (2234-13-1)	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

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1,4-DICN UNLABELED (1825-31-6)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1,4,6-TRICN 97% CHEMICAL PURITY UNLABELED (2437-54-9 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

1,3,5,7-TETRACN UNLABELED (53555-64-9)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE
Listed on the Canadian DSL (Domestic Substances List)

N-NONANE UNLABELED (111-84-2)
Listed on the Canadian DSL (Domestic Substances List)

2-MONOCN UNLABELED (91-58-7)
Listed on the Canadian DSL (Domestic Substances List)

1,2,3-TRICN UNLABELED (50402-52-3)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

1,4,5,8-TETRACN UNLABELED (3432-57-3)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

1,2,3,5,7-PENTACN UNLABELED (53555-65-0)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

1,2,3,5,8-PENTACN UNLABELED (150224-24-1)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

1,2,3,4,6,7-HEXACN UNLABELED (103426-96-6)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

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1,2,3,4,5,6,7-HEPTACN UNLABELED (58863-14-2)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

OCTACN UNLABELED (2234-13-1)

Listed on the Canadian NDSL (Non-Domestic Substances List)

1,4-DICN UNLABELED (1825-31-6)

Listed on the Canadian NDSL (Non-Domestic Substances List)

1,3,5,7-TETRACN UNLABELED (53555-64-9)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

2-MONOCN UNLABELED (91-58-7)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

OCTACN UNLABELED (2234-13-1)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

MONO-OCTA PCN NATIVE MIXTURE UNLABELED 1 UG/ML IN NONANE

State or local regulations	U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List
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Component	State or local regulations
N-NONANE UNLABELED(111-84-2)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List
2-MONOCN UNLABELED(91-58-7)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
OCTACN UNLABELED(2234-13-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
1,3,5,7-TETRACN UNLABELED(53555-64-9)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

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Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases	
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.