TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 26/03/2015 Revision date: : Version: 1.0

CLM-4735-S

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixtures

Product name. : TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE

Product code : CLM-4735-S

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 3	H336
Asp. Tox. 1	H304

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R20
Xn; R65
R10

Full text of R-phrases: see section 16

Classification (GHS-US)

Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT SE 3	H336
Asp. Tox. 1	H304

Adverse physicochemical, human health and environmental effects

Central Nervous System.

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS02 GHS08 GHS07

Signal word (CLP) : Danger

Hazardous ingredients : N-NONANE UNLABELED

Hazard statements (CLP) : H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof ventilating, lighting, electrical equipment
P261 - Avoid breathing vapors, spray, mist, gas, fume, dust
P264 - Wash Both hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves, protective clothing, face protection, eye protection

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS02 GHS08 GHS07

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
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) : P210 - Keep away from sparks, open flames, hot surfaces, heat. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof ventilating, lighting, electrical equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing vapors, spray, gas, mist, fume, dust
P264 - Wash Both hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves, protective clothing, face protection, eye protection
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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 POISON CENTER/doctor/physician if you feel unwell
P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P331 - If swallowed, 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 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use Alcohol resistant foam., Carbon dioxide., Dry chemical., Water spray 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 Comply with applicable regulations.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.9861	R10 Xn; R20 Xn; R65 R67 Xi; R38
TRANS-NONACHLOR (13C10, 98%)	(CAS No) 39765-80-5 (Unlabeled)	0.0139	Xn; R22 Xi; R36/37/38 N; R50/53

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.9861	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
TRANS-NONACHLOR (13C10, 98%)	(CAS No) 39765-80-5 (Unlabeled)	0.0139	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410

Name	Product identifier	%	Classification (GHS-US)
N-NONANE UNLABELED	(CAS No) 111-84-2	99.9861	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 Asp. Tox. 1, H304

Full text of R-, H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Move out of dangerous area. Consult a physician and show this safety data sheet.

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).

First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

First-aid measures after ingestion : Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapor.

Explosion hazard : May form flammable/explosive vapor-air mixture.

Reactivity : Vapors may form explosive mixture with air.

5.3. Advice for firefighters

Firefighting instructions : Use water spray to cool unopened containers.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid breathing vapors, 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.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment : Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : No naked lights. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.

Storage conditions : Store refrigerated (-5 C to 5 C). Protect from light.

Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

N-NONANE UNLABELED (111-84-2)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.0000000000 ppm Central Nervous System impairment.

8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

Physical state	:	Liquid
Appearance	:	Liquid.
Molecular mass	:	128.3 g/mol
Color	:	Colorless.
Odor	:	No data available
Odor threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	-53 °C (- 63 °F) - lit
Boiling point	:	151 °C (304 °F) - lit
Flash point	:	31.0 °C (87.8 °F) - closed cup
Self ignition temperature	:	205 °C (401 °F)
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Flammable liquid and vapor
Vapor pressure	:	12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F)
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	0.718 g/ml
Solubility	:	Water: 0 %
Log Pow	:	5.65
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	0.87 - 2.9 % (V)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapors may form explosive mixture with air.

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE	
LC50 inhalation rat (mg/l)	23760 mg/m³ male - 4 h
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE (gases)	3200.000 ppmV/4h
ATE (vapors)	11.000 mg/l/4h
ATE (dust, mist)	1.500 mg/l/4h

N-NONANE UNLABELED (111-84-2)	
LC50 inhalation rat (mg/l)	23760 mg/m³ male - 4 h
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE (gases)	3200.000 ppmV/4h
ATE (vapors)	11.000 mg/l/4h
ATE (dust, mist)	23.760 mg/l/4h

TRANS-NONACHLOR (13C10, 98%) (39765-80-5 (Unlabeled))	
LD50 oral rat	500 mg/kg
ATE (oral)	500.000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.
Skin - rat - Skin irritation - Draize test

Serious eye damage/irritation : Causes serious eye irritation.
No data available

Respiratory or skin sensitization : Not available
No data available

Germ cell mutagenicity : Not available

Carcinogenicity : Not classified

Reproductive toxicity : Not available

Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.
May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : Not classified
No data available

Aspiration hazard : May be fatal if swallowed and enters airways.

Potential Adverse human health effects and symptoms : Harmful if inhaled.

Symptoms/injuries after inhalation : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1. Toxicity

TRANS-NONACHLOR (13C10, 98%) (39765-80-5 (Unlabeled))	
EC50 Daphnia 1	0.022 mg/l Daphnia pulex (Water flea) - 48 h

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.

N-NONANE UNLABELED (111-84-2)	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.

TRANS-NONACHLOR (13C10, 98%) (39765-80-5 (Unlabeled))	
Log Pow	6.35

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

UN-No.(DOT) : 1920

DOT NA no. UN1920

14.2. UN proper shipping name

DOT Proper Shipping Name : Nonanes

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid

Packing group (DOT) : III - Minor Danger

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)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

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

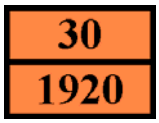
14.3. Additional information

Other information : No supplementary information available.

Overland transport

Packing group (ADR) : III
Class (ADR) : 3 - Flammable liquid
Hazard identification number (Kemler No.) : 30
Classification code (ADR) : F1
Danger labels (ADR) : 3 - Flammable liquids

Orange plates :



Tunnel restriction code : D/E
Limited quantities (ADR) 5L
EAC : 3Y
Excepted quantities (ADR) : E1

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel.
MFAG-No : 128

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L
Civil Aeronautics Law : Flammable liquids

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. 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

TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

N-NONANE UNLABELED (111-84-2)	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

15.2. International regulations

CANADA

TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE
Listed on the Canadian DSL (Domestic Substances List) inventory.

15.2.1. National regulations

No additional information available

15.3. US State regulations

TRANS-NONACHLOR (13C10, 98%) 100 UG/ML IN NONANE()	
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

N-NONANE UNLABELED (111-84-2)
U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List 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

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 R-, H- and EUH-phrases::

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Asp. Tox. 1	Aspiration hazard Category 1
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Flam. Liq. 3	Flammable liquids Category 3
Skin Irrit. 2	skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
R10	Flammable
R20	Harmful by inhalation
R22	Harmful if swallowed
R36/37/38	Irritating to eyes, respiratory system and skin
R38	Irritating to skin
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R65	Harmful: may cause lung damage if swallowed
R67	Vapors may cause drowsiness and dizziness
N	Dangerous for the environment
Xi	Irritant
Xn	Harmful

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard	: 3 - Liquids and solids that can be ignited under almost all ambient conditions.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 3 Serious Hazard
Physical	: 0 Minimal Hazard

CIL Mixture SDS

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