

## 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: 08/10/2015 Revision date: : Version: 1.0

ECN-2632

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

1.1. Product identifier

Product form : Mixtures

Product name. : 1,2,4-TRICN (PCN-14) UNLABELED 100 UG/ML IN NONANE

Product code : ECN-2632

## 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 <a href="mailto:cilsales@isotope.com">cilsales@isotope.com</a> 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 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; R65 Xi; R38 R10

Full text of R-phrases: see section 16

## Classification (GHS-US)

Flam. Liq. 3 H226 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.

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#### 2.2. Label elements

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

Hazard pictograms (CLP)







GHS02

)7

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 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 electrical, lighting, ventilating equipment

P261 - Avoid breathing fume, mist, spray, vapors P264 - Wash both hands thoroughly after handling P271 - Use only outdoors or in a well-ventilated area

P280 - Wear eye protection, face protection, protective clothing, protective gloves

## **GHS-US** labeling

Hazard pictograms (GHS-US)







GHS02

HS02

GHS07

GHS08

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 H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking

P233 - Keep container tightly closed

P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof lighting, electrical, ventilating equipment

P242 - Use only non-sparking tools

P243 - Take precautionary measures against static discharge

P261 - Avoid breathing fume, mist, spray, vapors P264 - Wash Both hands thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P280 - Wear protective clothing, protective gloves

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 broathing

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.

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#### 2.3. Other hazards

No additional information available

## **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

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	99.986	R10 Xn; R20 Xn; R65 R67 Xi; R38
1,2,4-TRICN UNLABELED	(CAS No) 50402-51-2 (EC no) 215-321-3 (EC index no)	0.014	Xn; R22 Xi; R36 Xn; R48/22
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	99.986	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
1,2,4-TRICN UNLABELED	(CAS No) 50402-51-2 (EC no) 215-321-3 (EC index no)	0.014	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 STOT RE 1, H372
Name	Product identifier	%	Classification (GHS-US)
N-NONANE UNLABELED	(CAS No) 111-84-2	99.986	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**

41	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.

First-aid measures after eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical

attention.

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

: For small fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

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### Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapor.

Explosion hazard : May form flammable/explosive vapor-air mixture. : Vapors may form explosive mixture with air. Reactivity

#### 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**

#### 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

: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate **Emergency procedures** 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

## **Environmental precautions**

Prevent entry to sewers and public waters.

## 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.

### Reference to other sections

No additional information available

## **SECTION 7: Handling and storage**

## Precautions for safe handling

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

No naked lights. No smoking. Take precautionary measures against static discharge. Use only Precautions for safe handling

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.

## Conditions for safe storage, including any incompatibilities

Proper grounding procedures to avoid static electricity should be followed. Ground/bond Technical measures

container and receiving equipment.

Storage conditions Store at room temperature away from light and moisture.

Incompatible materials Heat sources.

## Specific end use(s)

No additional information available

## **SECTION 8: Exposure controls/personal protection**

ION (BON 44) UNII ABELED 400 HOME IN NONANI

## **Control parameters**

1,2,4-TRICN (PCN-14) UNLABELED 100 UG/ML IN NONANE				

Italy - Portugal - USA ACGIH ACGIH TWA (ppm) 200.0000000000 ppm Central Nervous System impairment.

## **N-NONANE UNLABELED (111-84-2)**

ACGIH TWA (ppm) 200.0000000000 ppm Central Nervous System Italy - Portugal - USA ACGIH impairment.

## **Exposure controls**

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



Hand protection : Wear suitable protective clothing and gloves.

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

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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**

## Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture. Physical state : Liquid : Liquid. Appearance Color : Colorless.

Odor : No data available Odor threshold No data available рΗ No data available Relative evaporation rate (butyl acetate=1) : No data available No data available Melting point Freezing point : -53 °C (- 63 °F) - lit : 151 °C (304 °F) - lit Boiling point

Flash point : 31.0 °C (87.8 °F) - closed cup

: 205 °C (401 °F) Self ignition temperature 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 : 0.718 g/ml Density Solubility : Water: 0 %

Log Pow : 5.65

Log Kow : No data available : No data available Viscosity, kinematic Viscosity, dynamic : No data available : No data available Explosive properties Oxidizing properties : No data available : 0.87 - 2.9 % (V) **Explosive limits** 

## Other information

No additional information available

## **SECTION 10: Stability and reactivity**

## Reactivity

Vapors may form explosive mixture with air.

## **Chemical stability**

See storage and expiration date on CoA.

## Possibility of hazardous reactions

No additional information available

## **Conditions to avoid**

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

## Incompatible materials

Strong oxidizing agents.

## **Hazardous decomposition products**

May release flammable gases.

## **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

1,2,4-TRICN (PCN-14) UNLABELED 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

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1,2,4-TRICN (PCN-14) UNLABELED 100 UG/ML IN NONANE		
ATE (vapors)	23.760 mg/l/4h	
ATE (dust, mist)	23.760 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	
1,2,4-TRICN UNLABELED (50402-51-2)		
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	: Not classified	
exposure)	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.

: Causes skin irritation. Symptoms/injuries after skin contact Symptoms/injuries after eye contact : Causes eye irritation.

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

## **SECTION 12: Ecological information**

## **Toxicity**

No additional information available

## Persistence and degradability

No additional information available

#### 12.3. **Bioaccumulative potential**

1,2,4-TRICN (PCN-14) UNLABELED 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.

1,2,4-TRICN UNLABELED (50402-51-2)	
Log Kow	5.12 - 5.35

## **Mobility in soil**

No additional information available

## Results of PBT and vPvB assessment

No additional information available

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#### 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**

#### 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.

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

Ecology - waste materials : Hazardous waste due to toxicity.

## SECTION 14: Transport information

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

**UN** number

UN-No.(DOT) : 1920 DOT NA no. UN1920

## **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

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

#### **Additional information** 14.3.

Other information : No supplementary information available.

## **Overland transport**

Packing group (ADR) : 111

Class (ADR) : 3 - Flammable liquid

Hazard identification number (Kemler No.) : 30 Classification code (ADR) : F1

3 - Flammable liquids Danger labels (ADR)



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Orange plates : 30

1920

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 : 60 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 220 L

CFR 175.75)

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

1,2,4-TRICN (PCN-14) UNLABELED 100 UG/ML IN NONANE	
SARA Section 311/312 Hazard Classes	Fire hazard
	Immediate (acute) health hazard

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SARA Section 311/312 Hazard Classes	Fire hazard	ĺ
	Immediate (acute) health hazard	

## 15.2. International regulations

## **CANADA**

## 1,2,4-TRICN (PCN-14) UNLABELED 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

1,2,4-TRICN (PCN-14) UNLABELED 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

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## **N-NONANE UNLABELED (111-84-2)**

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::

A suita Tarr 4 (lab alatia a uran a un)	A cute to visite. (inhelation was over) Cota named
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
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 RE 1	Specific target organ toxicity (repeated exposure) Category 1
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
H336	May cause drowsiness or dizziness
H372	Causes damage to organs through prolonged or repeated exposure
R10	Flammable
R20	Harmful by inhalation
R22	Harmful if swallowed
R36	Irritating to eyes
R38	Irritating to skin
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R65	Harmful: may cause lung damage if swallowed
R67	Vapors may cause drowsiness and dizziness
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

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