

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: 22/10/2014

Revision date:

Version: 1.0

ECN-2641

I.1. Product identifier	
Product form	: Mixtures
Product name.	: 1,3,5,7-TETRACHLORONAPHTHALENE (PCN-42) UNLABELED 100 UG/ML IN NONAN
Product code	: ECN-2641
I.2. Relevant identified uses of the s	substance or mixture and uses advised against
I.2.1. Relevant identified uses	
ndustrial/Professional use spec	: For professional use only.
I.2.2. Uses advised against	
No additional information available	
.3. Details of the supplier of the sat	ety data sheet
Cambridge Isotope Laboratories, Inc. 50 Frontage Road	
Andover, MA 01810	
JSA	
JSA: 1-800-322-1174 Int: 1-978-749-800 cilsales@isotope.com www.isotope.com)
Emergency telephone number	
Emergency numbers:	
Chemtrec: 1-800-424-9300 (24 hours)	
nternational: 1-202-483-7616 (24 hours)	
SECTION 2: Hazards identificatio	n
2.1. Classification of the substance	or mixture
Classification according to Regulation (E	C) 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 67/5	48/EEC or 1999/45/EC
Kn; R20	
Kn; R65 R10	
Full text of R-phrases: see section 16	
Classification (GHS-US)	
lam. Liq. 3 Acute Tox. 4 (Inhalation:dust,mist)	H226 H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT SE 3 Asp. Tox. 1	H336 H304
19p. 10X. 1	N304

Adverse physicochemical, human health and environmental effects

Central Nervous System.

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2.2. Label elements	
Labeling according to Regulation (EC) N	lo. 1272/2008 [CLP]
Hazard pictograms (CLP)	$ \land \land$
	GHS02 GHS07 GHS08
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 electrical, lighting, ventilating 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
GHS-US labeling	
Hazard pictograms (GHS-US)	$\wedge \wedge \wedge$
	$\mathbf{\underline{\mathbf{\nabla}}}$
	GHS02 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 H332 - Harmful if inhaled
	H336 - May cause drowsiness or dizziness
Precautionary statements (GHS-US)	: P210 - Keep away from heat, hot surfaces, sparks, open flames 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, 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 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., Wate
	spray for extinction P403+P233 - Store in a well-ventilated place. Keep container tightly closed
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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

.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
1,3,5,7-TETRACHLORONAPHTHALENE UNLABELED	(CAS No)53555-64-9 (Unlabeled)	0.0139	Xn; R22 Xi; R41 Xi; R38 N; R50/53 R48
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), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
1,3,5,7-TETRACHLORONAPHTHALENE UNLABELED	(CAS No)53555-64-9 (Unlabeled)	0.0139	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
Name	Product identifier	%	Classification (GHS-US)
N-NONANE UNLABELED	(CAS No)111-84-2	99.9861	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), 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

00/10/0011	EN (E _ 1 + 1 0)
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways.
Symptoms/injuries after eye contact	: Causes eye irritation.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness.
4.2. Most important symptoms and effects	s, both acute and delayed
First-aid measures after ingestion	: Immediately call a POISON CENTER or doctor/physician.
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 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 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 general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
4.1. Description of first aid measures	
SECTION 4: First aid measures	

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	al 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 s	ubstance or mixture
Fire hazard	: Flammable liquid and vapor.
Explosion hazard	: May form flammable/explosive vapor-air mixture.
5.3. Advice for firefighters	
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
SECTION 6: Accidental release mea	asures
6.1. Personal precautions, protective e	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 No additional information available	
6.1.2. For emergency responders	
Protective equipment	: Avoid breathing dust, mist or spray.
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 containm	nent and cleaning up
No additional information available	
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. Avoid breathing dust, mist or spray.
Hygiene measures	: Wash Both hands thoroughly after handling.
7.2. Conditions for safe storage, includ	ling 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 at room temperature away from light and moisture.
Incompatible materials	: Heat sources.
7.3. Specific end use(s)	
No additional information available	
SECTION 8: Exposure controls/per	sonal protection
0.4 Operational in a manufacture	

8.1. Control parameters

N-NONANE UNLABELED (11	1-84-2)	
Italy - Portugal- USA ACGIH	ACGIH TWA (ppm)	200.000000000 ppm Central Nervous System
		impairment.

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8.2. Exposure controls : Gloves. Protective goggles. Protective clothing. Self-contained breathing apparatus. 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.
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.

Respiratory protection	: Where exposure through inhalation may oc 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 comp	onent of this mixture.
Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 128.3
Color	: No data available.
Odor	: No data available
Odor threshold	: No data available
рН	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: -53 °C (- 63 °F) - lit
Freezing point	: No data available
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
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	

20/10/201	LA EN (English LIC)	E/4.0
No addit	ional information available	
10.5.	Incompatible materials	
Open fla	me. Overheating. Direct sunlight. Heat. Sparks.	
10.4.	Conditions to avoid	
	ional information available	
10.3.	Possibility of hazardous reactions	
See stor	age and expiration date on CoA.	
10.2.	Chemical stability	
	ional information available	
10.1.	Reactivity	
SECTI	ON 10: Stability and reactivity	

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10.6. Hazardous decomposition products May release flammable gases.		
SECTION 11: Toxicological information		
11.1. Information on toxicological effects		
Acute toxicity	: Harmful if inhaled.	
1,3,5,7-TETRACHLORONAPHTHALENE (PCN	-42) UNLABELED 100 UG/ML IN NONANE	
ATE (dust, mist)	1.500 mg/l/4h	
N-NONANE UNLABELED (111-84-2)		
LC50 inhalation rat (ppm)	3200 ppm/4h	
ATE (dust, mist)	1.500 mg/l/4h	
1,3,5,7-TETRACHLORONAPHTHALENE UNLA	ABELED (53555-64-9 (Unlabeled))	
ATE (oral)	500.000 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	
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.	
Specific target organ toxicity (repeated exposure)	: Not classified	
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.	

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12.1. Toxicity
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No additional information available

12.2. Persistence and degradability

N-NONANE UNLABELED (111-84-2)		
Persistence and degradability	Not available.	
1,3,5,7-TETRACHLORONAPHTHALENE UNLABELED (53555-64-9 (Unlabeled))		
Persistence and degradability	Not available.	
12.3. Bioaccumulative potential		
1,3,5,7-TETRACHLORONAPHTHALENE (PCN-42) UNLABELED 100 UG/ML IN NONANE		
Log Pow	5.65	
N-NONANE UNLABELED (111-84-2)		
Log Pow	5.65	
Bioaccumulative potential	Indication of bioaccumulation.	
1,3,5,7-TETRACHLORONAPHTHALENE UNLABELED (53555-64-9 (Unlabeled))		
Bioaccumulative potential	Not available.	
12.4. Mobility in soil		
N-NONANE UNLABELED (111-84-2)		
Ecology - soil	Not available.	

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Ecology - soil	ILABELED (53555-64-9 (Unlabeled)) Not available.
•	
2.5. Results of PBT and vPvB assessme	ent
lo additional information available	
2.6. Other adverse effects	
lo additional information available	
SECTION 13: Disposal consideratio	ns
3.1. Waste treatment methods	
Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and Loca environmental control regulations.
Vaste disposal recommendations	: Dispose of contents/container to Comply with applicable regulations.
dditional information	: Handle empty containers with care because residual vapors are flammable.
cology - waste materials	: Hazardous waste due to toxicity.
SECTION 14: Transport information	
n accordance with ADR / RID / ADNR / IMDG /	
4.1. UN number	
JN-No.(DOT)	: 1920
OOT NA no.	UN1920
4.2. UN proper shipping name	
OOT Proper Shipping Name	: Nonanes
Department of Transportation (DOT) Hazard	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
lazard labels (DOT)	: 3 - Flammable liquid
	3
Packing group (DOT)	: III - Minor Danger
OOT 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 liquid with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 5 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Tab 2 for UN2672). T2 - 1.5 178.274(d)(2) Normal
	: 150
OOT Packaging Exceptions (49 CFR 173.xxx)	
OOT Packaging Exceptions (49 CFR 173.xxx) OOT Packaging Non Bulk (49 CFR 173.xxx)	: 203

14.3. Additional information

Other information

: No supplementary information available.

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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
J ()	3
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 (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 Anne	x II of MARPOL 73/78 and the IBC Code
Not applicable	
SECTION 15: Regulatory information	
15.1. US Federal regulations	
1,3,5,7-TETRACHLORONAPHTHALENE (PC	
SARA Section 311/312 Hazard Classes	Fire hazard
•	Immediate (acute) health hazard
N-NONANE UNLABELED (111-84-2)	Immediate (acute) health hazard

15.2. International regulations

CANADA

1,3,5,7-TETRACHLORONAPHTHALENE (PCN-42) UNLABELED 100 UG/ML IN NONANE

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.2.1. National regulations

No additional information available

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15.3. US State regulations		
1,3,5,7-TETRACHLORONAPHTHALENE (PCN-42) 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

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)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) 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 Dam. 1	Serious eye damage/eye irritation 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 2	Specific target organ toxicity (repeated exposure) Category 2
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
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H373	May cause damage to organs through prolonged or repeated exposure
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
R38	Irritating to skin
R41	Risk of serious damage to eyes
R48	Danger of serious damage to health by prolonged exposure
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
Ν	Dangerous for the environment
Xi	Irritant
Xn	Harmful

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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