

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: 24/11/2014

Revision date:

Version: 1.0

EC-5424

	ubstance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Mixture
Product name.	: DL-PCB RH12 SAMPLING SPIKE (13C12, 99%) 100 NG/ML IN NONANE
Product code	: EC-5424
1.2. Relevant identified uses of the su	bstance or mixture and uses advised against
1.2.1. Relevant identified uses	
Main use category	: Industrial use
Industrial/Professional use spec	: For professional use only. Industrial.
1.2.2. Uses advised against	
No additional information available	
1.3. Details of the supplier of the safe	ty 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 of	

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

GHS-US classification

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

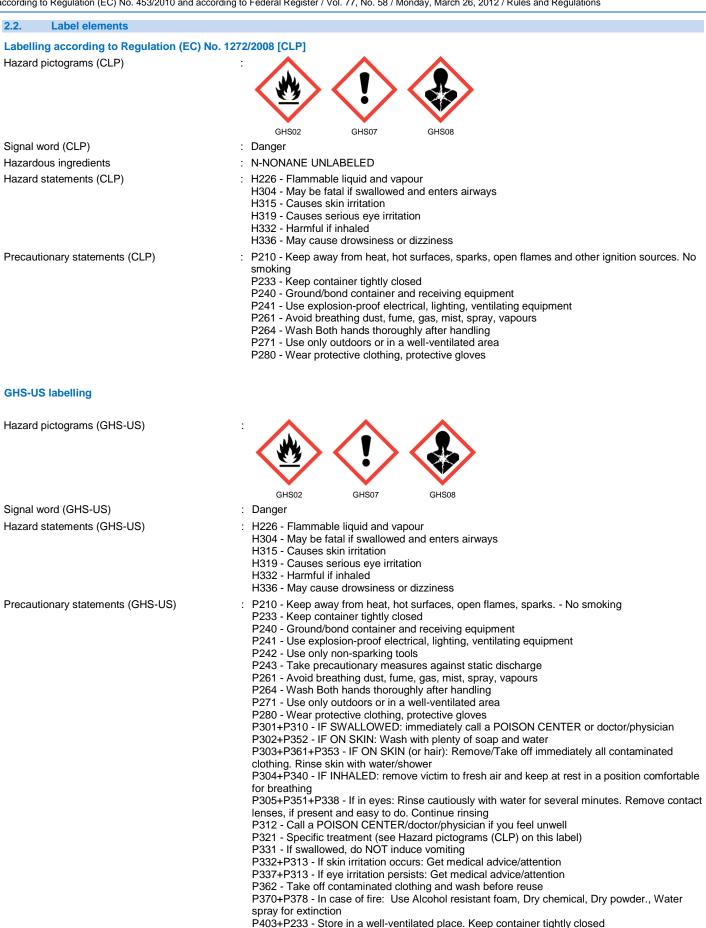
Adverse physicochemical, human health and environmental effects

Central Nervous System.

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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

Substances 3.1.

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.999958	R10 Xn; R20 Xn; R65 R67 Xi; R38
2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%)	(CAS No) 39635-35-3 (Unlabeled) (EC index no) 602-039-00-4	0.000014	N; R50/53 R33 R48
2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%)	(CAS No) 235416-29-2 (EC index no) 602-039-00-4	0.000014	Xn; R48/20/21/22 N; R50/53 R33
2,3,4,4'-TETRACB (PCB-60) (13C12, 99%)	(CAS No) 33025-41-1 (Unlabeled) (EC index no) 602-039-00-4	0.000014	N; R50/53 R33 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	99.999958	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
2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%)	(CAS No) 39635-35-3 (Unlabeled) (EC index no) 602-039-00-4	0.000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%)	(CAS No) 235416-29-2 (EC index no) 602-039-00-4	0.000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,4,4'-TETRACB (PCB-60) (13C12, 99%)	(CAS No) 33025-41-1 (Unlabeled) (EC index no) 602-039-00-4	0.000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Name	Product identifier	%	GHS-US classification
N-NONANE UNLABELED	(CAS No) 111-84-2	99.999958	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	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).		
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.		

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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: Gently 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 cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Rinse immediately with plenty of water. Get medica advice/attention.
First-aid measures after ingestion	:	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.
4.2. Most important symptoms and effe	cts,	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 serious eye irritation.
4.3. Indication of any immediate medica	ıl at	tention and special treatment needed
No additional information available		
SECTION 5: Firefighting measures		
5.1. Extinguishing media		
Suitable extinguishing media	:	Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	:	Do not use a heavy water stream.
5.2. Special hazards arising from the su	ıbst	ance or mixture
Fire hazard	:	Flammable liquid and vapour.
Explosion hazard	:	May form flammable/explosive vapour-air mixture.
5.3. Advice for firefighters		
Firefighting instructions	:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection.
SECTION 6: Accidental release mea	su	res
6.1. Personal precautions, protective ed		
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	:	Evacuate unnecessary personnel.
6.1.2. For emergency responders		
Protective equipment	:	Equip cleanup crew with proper protection. Avoid breathing dust, mist or spray.
Emergency procedures		Ventilate area.
6.2. Environmental precautions		
	va	uthorities if liquid enters sewers or public waters.
6.3. Methods and material for containm	-	
Methods for cleaning up		Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect
nonious for cleaning up	•	spillage. Store aways from other materials.
6.4. Reference to other sections		
See Heading 8. Exposure controls and personal	l pro	ptection.
SECTION 7: Handling and storage		
7.1. Precautions for safe handling		
Additional hazards when processed	:	Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling	:	Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapour. 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, include	ing	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.

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Incompatible products	: Strong bases. strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.
7.3. Specific end use(s)	
No additional information available	
SECTION 8: Exposure controls/pe	rsonal protection
8.1. Control parameters	
N-NONANE UNLABELED (111-84-2) Italy - Portugal - USA ACGIH ACGIH TW/	A (ppm) 200,00000000 ppm Central Naryous System
	A (ppm) 200.000000000 ppm Central Nervous System impairment.
8.2. Exposure controls Personal protective equipment	: Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.
Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.
Other information	: When using, do not eat, drink or smoke.
SECTION 9: Physical and chemica	Il properties
9.1. Information on basic physical an	d chemical properties
The properties listed below are for the solvent, the main com	ponent of this mixture.
Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 128.3
Colour	: Colourless.
Odour Odour threshold	: characteristic.
	: No data available
pH Relative evaporation rate (butylacetate=1)	: No data available : No data available
	: No data available
Melting point 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 vapour
Vapour pressure	: 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F)
Relative vapour 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

9.2. Other information

Oxidising properties

No additional information available

: No data available : 0.87 - 2.9 % (V)

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SECTION 10: Stability and reactivity		
10.1. Reactivity		
No additional information available		
10.2. Chemical stability		
See storage and expiration date on CoA.		
10.3. Possibility of hazardous reactions		
Not established.		
10.4. Conditions to avoid		
Direct sunlight. Extremely high or low temperature	res. Open flame. Overheating. Heat. Sparks.	
10.5. Incompatible materials		
strong acids. Strong bases.		
10.6. Hazardous decomposition products		
fume. Carbon monoxide. Carbon dioxide. May re	lease flammable gases.	
SECTION 11: Toxicological informat	ion	
11.1. Information on toxicological effects		
Acute toxicity	: Harmful if inhaled.	
DL-PCB RH12 SAMPLING SPIKE (13C12, 99	%) 100 NG/ML IN NONANE	
ATE (dust,mist)	1.500 mg/l/4h	
N-NONANE UNLABELED (111-84-2)		
LC50 inhalation rat (mg/l)	23760 mg/m ³ male - 4 h	
LC50 inhalation rat (ppm)	3200 ppm/4h	
ATE (gases)	3200.000 ppmV/4h	
ATE (vapours) ATE (dust,mist)	11.000 mg/l/4h 23.760 mg/l/4h	
Skin corrosion/irritation Serious eye damage/irritation	: Causes skin irritation. : Causes serious eye irritation.	
Respiratory or skin sensitisation	: Not classified	
	Based on available data, the classification criteria are not met	
Germ cell mutagenicity	: Not classified	
	Based on available data, the classification criteria are not met	
Carcinogenicity	: Not classified	
	Based on available data, the classification criteria are not met	
Reproductive toxicity	: Not classified	
	Based on available data, the classification criteria are not met	
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.	
Specific target organ toxicity (repeated exposure)	: Not classified	
	Based on available data, the classification criteria are not met	
Aspiration hazard	: May be fatal if swallowed and enters airways.	
.	Based on available data, the classification criteria are not met	
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 serious eye irritation.	

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

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12.2. Persistence and degradability	
DL-PCB RH12 SAMPLING SPIKE (13C12, 999	
Persistence and degradability	Not established.
12.3. Bioaccumulative potential	
DL-PCB RH12 SAMPLING SPIKE (13C12, 999	%) 100 NG/ML IN NONANE
Log Pow	5.65
Bioaccumulative potential	Not established.
N-NONANE UNLABELED (111-84-2)	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.
12.4. Mobility in soil	
No additional information available	
12.5. Results of PBT and vPvB assessme	nt
No additional information available	
12.6. Other adverse effects	A usid selected to the environment
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideration	IS
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. Dispose of contents/container to Comply with applicable regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.
SECTION 14: Transport information	
· · · · · ·	CAO ///ATA
In accordance with ADR / RID / ADNR / IMDG / I	
14.1. UN number	: 1920
UN-No.(DOT) 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
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
Marine pollutant	: No
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14.3. Additional information	
Other information	: No supplementary information available.
Overland transport	
Packing group (ADR)	: III
Class (ADR)	: 3 - Flammable liquids
Hazard identification number (Kemler No.)	: 30
Classification code (ADR)	: F1
Danger labels (ADR)	: 3 - Flammable liquids
Orange plates	: 30
	1920
Tunnel restriction code	: D/E
Limited quantities (ADR)	5L
EAC code	: 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(Hazardous materials notice Appended Table 1 Article 194 of the Enforcemen Regulations)
14.4. Environmental hazards	
Other information	: No supplementary information available.
14.5. Special precautions for user	
14.6. Transport in bulk according to Annex	x II of MARPOL 73/78 and the IBC Code
Not applicable	
SECTION 15: Regulatory information	
15.1. US Federal regulations	
DL-PCB RH12 SAMPLING SPIKE (13C12, 99%	6) 100 NG/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

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15.2. International regulations

CANADA

DL-PCB RH12 SAMPLING SPIKE (13C12, 99%) 100 NG/ML IN NONANE

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

15.2.1. National regulations

No additional information available

	15.3. US State regulations		
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,	DL-PCB RH12 SAMPLING SPIKE (13C12, 99%) 100 NG/ML IN NONANE()		
birth defects, or any other reproductive harm.		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,	

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

Data sources

 REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
 None.

Other information

Full text of R-, H- and EUH-phrases::

Acute toxicity (inhalation:vapour) Category 4
Hazardous to the aquatic environment — AcuteHazard, Category 1
Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aspiration hazard, Category 1
Serious eye damage/eye irritation, Category 2
Flammable liquids, Category 3
Skin corrosion/irritation, Category 2
Specific target organ toxicity — Repeated exposure, Category 2
Specific target organ toxicity — Single exposure, Category 3, Narcosis
Flammable liquid and vapour
May be fatal if swallowed and enters airways
Causes skin irritation
Causes serious eye irritation
Harmful if inhaled
May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects
Flammable
Harmful by inhalation
Danger of cumulative effects
Irritating to skin
Danger of serious damage to health by prolonged exposure
Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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	R65	Harmful: may cause lung damage if swallowed
	R67	Vapours 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.
нміз	S 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