



# 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 11/3/2014 Revision date: 8/30/2023 Supersedes: 5/31/2022 Version: 2.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209  
Product code : EC-4058

#### 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](mailto:cilsales@isotope.com) - [www.isotope.com](http://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:dust,mist) 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

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

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Precautionary statements (GHS US) : 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 dust, fume, gas, 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.  
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 poison center or doctor if you feel unwell.  
P321 - Specific treatment (see Hazard pictograms (CLP) 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 - Take off contaminated clothing and wash before reuse.  
P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish.  
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 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

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
N-NONANE UNLABELED	CAS-No.: 111-84-2	99.995128	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

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS US classification
DECACB (PCB-209) (13C12, 99%)	CAS-No.: 105600-27-9	0.000696	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Carc. 1A, H350 Repr. 1A, H360 STOT SE 2, H371 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%)	CAS-No.: 104130-39-4	0.000696	STOT RE 2, H373 Aquatic Chronic 1, H410
2,2',5,5'-TETRACB (PCB-52) (13C12, 99%)	CAS-No.: 208263-80-3	0.000696	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,4,4'-TRICB (PCB-28) (13C12, 99%)	CAS-No.: 208263-76-7	0.000696	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%)	CAS-No.: 208263-66-5	0.000696	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%)	CAS-No.: 185376-58-3	0.000696	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%)	CAS-No.: 35065-29-3 (Unlabeled)	0.000696	STOT SE 2, H371 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	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell. Give oxygen or artificial respiration if necessary.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
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: Get medical advice/attention.
First-aid measures after ingestion	: Do not induce vomiting. Call a physician immediately.

### 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.

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

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

### 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.  
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

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

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. 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 contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 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 at room temperature away from light and moisture.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.
<b>DECACB (PCB-209) (13C12, 99%) (105600-27-9)</b>	
<b>USA - NIOSH - Occupational Exposure Limits</b>	
NIOSH REL TWA	0.001 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits. Remarks : Potential Occupational Carcinogen.
<b>2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) (104130-39-4)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.
<b>2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA [1]	0.5 mg/m <sup>3</sup>
<b>2,4,4'-TRICB (PCB-28) (13C12, 99%) (208263-76-7)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) (208263-66-5)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.
<b>2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.
<b>N-NONANE UNLABELED (111-84-2)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.
<b>USA - OSHA - Occupational Exposure Limits</b>	
OSHA PEL TWA [1]	1050 mg/m <sup>3</sup> 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.
<b>USA - NIOSH - Occupational Exposure Limits</b>	
NIOSH REL TWA	1050 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	200 ppm USA. NIOSH Recommended Exposure Limits
Remark (NIOSH)	Central Nervous System impairment
<b>2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled))</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
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.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

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

<b>Materials for protective clothing:</b>
Wear suitable protective clothing and gloves
<b>Hand protection:</b>
protective gloves

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 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
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 151 °C (304 °F) - lit
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Flammable liquid and vapor.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: 5.65
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
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

Flammable liquid and vapor. Vapors may form flammable mixture with air.

# 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 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

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>).

## 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.

#### 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209

LC50 Inhalation - Rat	23760 mg/m <sup>3</sup> male - 4 h
ATE US (dust, mist)	1.5 mg/l/4h
Additional data	Skin corrosion/irritation, Dermal, rat: Result: Skin Irritation (Draize Test) S. Typhimurium Result negative

#### DECACB (PCB-209) (13C12, 99%) (105600-27-9)

ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

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

LC50 Inhalation - Rat	23760 mg/m <sup>3</sup> 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

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Causes serious eye irritation.  
Respiratory or skin sensitization : Not classified



# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

<b>2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) (104130-39-4)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

<b>2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

<b>2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) (208263-66-5)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Not classified  
STOT-single exposure : May cause drowsiness or dizziness.

<b>DECACB (PCB-209) (13C12, 99%) (105600-27-9)</b>	
STOT-single exposure	May cause damage to organs (endocrine system) (Dermal, Inhalation, oral).

<b>N-NONANE UNLABELED (111-84-2)</b>	
STOT-single exposure	May cause drowsiness or dizziness.

<b>2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled))</b>	
STOT-single exposure	May cause damage to organs (liver, Skin) (Dermal, Inhalation, oral).

STOT-repeated exposure : Not classified

<b>2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) (104130-39-4)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).

<b>2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)</b>	
STOT-repeated exposure	May cause damage to organs (central nervous system, kidneys, liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).

<b>2,4,4'-TRICB (PCB-28) (13C12, 99%) (208263-76-7)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).

<b>2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) (208263-66-5)</b>	
STOT-repeated exposure	May cause damage to organs (kidneys, liver, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral).

<b>2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3)</b>	
STOT-repeated exposure	May cause damage to organs (liver, Skin) through prolonged or repeated exposure (oral, Dermal, Inhalation).

Aspiration hazard : May be fatal if swallowed and enters airways.  
Viscosity, kinematic : No data available

<b>N-NONANE UNLABELED (111-84-2)</b>	
Viscosity, kinematic	≤ 1.008 mm <sup>2</sup> /s at 20 °C (68 °F)

# 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
-------------------	--

#### 2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)

LC50 - Fish [1]	≥ 0.002 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	≥ 0.002 mg/l Daphnia magna (Water flea) - 48 h
NOEC (chronic)	0.1 mg/l Oncorhynchus mykiss (rainbow trout) - 7 d

#### 2,4,4'-TRICB (PCB-28) (13C12, 99%) (208263-76-7)

LC50 - Fish [1]	> 0.16 mg/l Pimpephale promelas (fathead minnow) -96h
EC50 - Crustacea [1]	> 0.16 mg/l Daphnia magna (Water flea) -48h

### 12.2. Persistence and degradability

#### DECACB (PCB-209) (13C12, 99%) (105600-27-9)

Persistence and degradability	May cause long-term adverse effects in the environment.
-------------------------------	---

### 12.3. Bioaccumulative potential

#### 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209

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

#### 2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3)

Partition coefficient n-octanol/water (Log Pow)	7.75
---	------

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

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

#### 2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled))

Partition coefficient n-octanol/water (Log Pow)	8.27
---	------

### 12.4. Mobility in soil

No additional information available

# 13C LABELED PCB MIXTURE IN NONANE PCBS-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 12.5. Other adverse effects

Other adverse effects : Disposal must be done according to official regulations.

## 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



#### TDG

Transport hazard class(es) (TDG) : 3

Hazard labels (TDG) : 3



#### IMDG

Transport hazard class(es) (IMDG) : 3

Hazard labels (IMDG) : 3

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations



### 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

Marine pollutant : Yes (IMDG only)



Other information : No supplementary information available.

### 14.6. Special precautions for user

#### DOT

UN-No.(DOT) : UN1920  
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

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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  
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

#### 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

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):

# 13C LABELED PCB MIXTURE IN NONANE PCBs- 28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	CAS-No.	Listing	Commercial status	Flags
DECACB (PCB-209) (13C12, 99%)	105600-27-9	Not present	-	
2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%)	104130-39-4	Not present	-	
2,2',5,5'-TETRACB (PCB-52) (13C12, 99%)	208263-80-3	Not present	-	
2,4,4'-TRICB (PCB-28) (13C12, 99%)	208263-76-7	Not present	-	
2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%)	208263-66-5	Not present	-	
2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%)	185376-58-3	Not present	-	
N-NONANE UNLABELED	111-84-2	Present	Active	T
2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%)	35065-29-3 (Unlabeled)	Not present	-	

<b>DECACB (PCB-209) (13C12, 99%) (105600-27-9)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) (104130-39-4)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>2,4,4'-TRICB (PCB-28) (13C12, 99%) (208263-76-7)</b>	
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	Delayed (chronic) health hazard

<b>2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) (208263-66-5)</b>	
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	Delayed (chronic) health hazard

<b>2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3)</b>	
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	Delayed (chronic) health hazard

<b>N-NONANE UNLABELED (111-84-2)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

<b>2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled))</b>	
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	Delayed (chronic) health hazard

### 15.2. International regulations

#### CANADA

<b>13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209</b>
Listed on the Canadian DSL (Domestic Substances List)

<b>DECACB (PCB-209) (13C12, 99%) (105600-27-9)</b>
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

<b>2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) (104130-39-4)</b>
Listed on the Canadian DSL (Domestic Substances List)

<b>2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)</b>
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

<b>2,4,4'-TRICB (PCB-28) (13C12, 99%) (208263-76-7)</b>
Listed on the Canadian DSL (Domestic Substances List)

<b>2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) (208263-66-5)</b>
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

<b>2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3)</b>
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

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

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 15.3. US State regulations

#### 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

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
----------------------------	---

#### DECACB (PCB-209) (13C12, 99%) (105600-27-9)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	No	No		

#### 2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) (104130-39-4)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes		

#### 2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes		

#### 2,4,4'-TRICB (PCB-28) (13C12, 99%) (208263-76-7)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes		

#### 2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) (208263-66-5)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes		



# 13C LABELED PCB MIXTURE IN NONANE PCBs-28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes		

2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	No		

Component	State or local regulations
2,4,4'-TRICB (PCB-28) (13C12, 99%)(208263-76-7)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
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

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date	: 08/30/2023
Data sources	: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
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
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H350	May cause cancer

# 13C LABELED PCB MIXTURE IN NONANE PCBs- 28/52/101/138/153/180/209

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H360	May damage fertility or the unborn child
H371	May cause damage to organs
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

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.