



# EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/<sup>13</sup>C12, 99%) IN ISOOCTANE:NONANE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 8/19/2014 Revision date: 9/18/2023 Supersedes: 3/25/2020 Version: 3.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/<sup>13</sup>C12, 99%) IN ISOOCTANE:NONANE  
Product code : EC-5380-CS3

#### 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 1	H224	Extremely 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
Hazardous to the aquatic environment – Acute Hazard Category 2	H401	Toxic to aquatic life
Hazardous to the aquatic environment – Chronic Hazard Category 2	H411	Toxic to aquatic life with long lasting effects

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) :

H224 - Extremely flammable liquid and vapor  
H304 - May be fatal if swallowed and enters airways

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	H315 - Causes skin irritation
	H319 - Causes serious eye irritation
	H332 - Harmful if inhaled
	H336 - May cause drowsiness or dizziness
	H401 - Toxic to aquatic life
	H411 - Toxic to aquatic life with long lasting effects
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.
	P273 - Avoid release to the environment.
	P280 - Wear protective gloves, protective clothing.
	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.
	P391 - Collect spillage.
	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

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### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
N-NONANE UNLABELED	CAS-No.: 111-84-2	90.3439229	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
ISOOCTANE UNLABELED	CAS-No.: 540-84-1	9.6560283	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3',4,4',5-PENTACB UNLABELED	CAS-No.: 31508-00-6	0.0000084	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4'-TETRACB UNLABELED	CAS-No.: 32598-13-3	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,4,4',5-TETRACB UNLABELED	CAS-No.: 70362-50-4	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2',3,4,4',5-PENTACB UNLABELED	CAS-No.: 65510-44-3	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,4'-PENTACB UNLABELED	CAS-No.: 32598-14-4	0.0000014	Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,4,4',5-PENTACB UNLABELED	CAS-No.: 74472-37-0	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4',5,5'-HEXACB UNLABELED	CAS-No.: 32774-16-6	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4',5-PENTACB UNLABELED	CAS-No.: 57465-28-8	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,4',5,5'-HEPTACB UNLABELED	CAS-No.: 39635-31-9	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,4',5-HEXACB UNLABELED	CAS-No.: 38380-08-4	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3',4,4',5,5'-HEXACB UNLABELED	CAS-No.: 52663-72-6	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	GHS US classification
2,3,3',4,4',5'-HEXACB UNLABELED	CAS-No.: 69782-90-7	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,4',5'-HEXACB (PCB-156) (13C12, 99%)	CAS-No.: 208263-68-7	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4'-TETRACB (PCB-77) (13C12, 99%)	CAS-No.: 105600-23-5	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4',5'-PENTACB (PCB-126) (13C12, 99%)	CAS-No.: 208263-65-4	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%)	CAS-No.: 32774-16-6 (Unlabeled)	0.0000014	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)	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%)	CAS-No.: 39635-33-1 (Unlabeled)	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3',4',5'-TETRACB (PCB-70) (13C12, 99%)	CAS-No.: 208263-81-4	0.0000014	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	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,4,4',5'-TETRACB (PCB-81) (13C12, 99%)	CAS-No.: 208461-24-9	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3',4,4',5'-PENTACB (PCB-118) (13C12, 98%)	CAS-No.: 104130-40-7	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2',3,4,4',5'-PENTACB (PCB-123) (13C12, 99%)	CAS-No.: 208263-64-3	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%)	CAS-No.: 39635-35-3 (Unlabeled)	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,2',3,3',4,4',5'-HEPTACB (PCB-170) (13C12, 99%)	CAS-No.: 35065-30-6 (Unlabeled)	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%)	CAS-No.: 208263-73-4	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Name	Product identifier	%	GHS US classification
2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%)	CAS-No.: 235416-30-5	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%)	CAS-No.: 208263-69-8	0.0000014	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%)	CAS-No.: 208263-62-1	0.0000014	Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%)	CAS-No.: 208263-63-2	0.0000014	STOT RE 2, H373 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.

### 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	: Extremely flammable liquid and vapor.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

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### 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.
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#### 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".
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### 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	: Avoid all contact with skin, eyes, or clothing. Keep away from sources of ignition - No smoking. Do not breathe gas/fumes/vapor/spray (appropriate wording to be specified by the manufacturer). Take precautionary measures against static discharges.
Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing fume, gas, mist, spray, vapors. Avoid contact with skin and eyes.
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	: Store in a well-ventilated place. Keep container tightly closed. Keep dry. Ground/bond container and receiving equipment.
Storage conditions	: Store at room temperature away from light and moisture.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/13C12, 99%) IN ISOCTANE:NONANE

No additional information available

##### 3,3',4,4'-TETRACB UNLABELED (32598-13-3)

No additional information available

##### 3,4,4',5-TETRACB UNLABELED (70362-50-4)

No additional information available

##### 2',3,4,4',5-PENTACB UNLABELED (65510-44-3)

No additional information available

##### 2,3,3',4,4'-PENTACB UNLABELED (32598-14-4)

No additional information available

##### 2,3,4,4',5-PENTACB UNLABELED (74472-37-0)

No additional information available

##### 2,3',4,4',5-PENTACB UNLABELED (31508-00-6)

No additional information available

##### 3,3',4,4',5,5'-HEXACB UNLABELED (32774-16-6)

No additional information available

##### 3,3',4,4',5-PENTACB UNLABELED (57465-28-8)

No additional information available

##### 2,3,3',4,4',5,5'-HEPTACB UNLABELED (39635-31-9)

No additional information available

##### 2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4)

No additional information available

##### 2,3',4,4',5,5'-HEXACB UNLABELED (52663-72-6)

No additional information available

##### 2,3,3',4,4',5'-HEXACB UNLABELED (69782-90-7)

No additional information available

##### 2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) (208263-68-7)

##### USA - ACGIH - Occupational Exposure Limits

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.

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<b>3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)</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>3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) (208263-65-4)</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>3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (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.
<b>2,3,4,4'-TETRACB (PCB-60) (13C12, 99%) (33025-41-1 (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.
<b>3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%) (39635-33-1 (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.
<b>2,3',4',5-TETRACB (PCB-70) (13C12, 99%) (208263-81-4)</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>2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%) (235416-29-2)</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>3,4,4',5-TETRACB (PCB-81) (13C12, 99%) (208461-24-9)</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>2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7)</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.
<b>2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) (208263-64-3)</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.



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<b>2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%) (39635-35-3 (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.
<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>ISOCTANE UNLABELED (540-84-1)</b>	
<b>USA - ACGIH - Occupational Exposure Limits</b>	
ACGIH OEL TWA [ppm]	300 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	Upper Respiratory Tract irritation
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',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (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.
<b>2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) (208263-73-4)</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>2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) (235416-30-5)</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.

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### 2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) (208263-69-8)

#### USA - ACGIH - Occupational Exposure Limits

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.

### 2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) (208263-62-1)

#### USA - ACGIH - Occupational Exposure Limits

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.

### 2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) (208263-63-2)

#### USA - ACGIH - Occupational Exposure Limits

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 : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- Environmental exposure controls : Avoid release to the environment.

## 8.3. Individual protection measures/Personal protective equipment

### Personal protective equipment:

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

#### Materials for protective clothing:

Wear suitable protective clothing and gloves

#### Hand protection:

Wear suitable protective clothing and 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

### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

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Appearance	: Liquid.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
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)	: No data available
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.

### 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>).

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### 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.

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ATE US (dust, mist)	1.5 mg/l/4h
3,4,4',5-TETRACB UNLABELED (70362-50-4)	
Additional information	LD50 - Oral - guinea pig - 1 mg/kg
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
ISOCTANE UNLABELED (540-84-1)	
LD50 oral rat	> 5000 mg/kg (OECD Test Guideline 401)
LD50 dermal rabbit	> 2000 mg/kg (OECD Test Guideline 402)
LC50 Inhalation - Rat	> 33.52 mg/l/4h (OECD Test Guideline 403)
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
3,3',4,4',5-PENTACB UNLABELED (57465-28-8)	
IARC group	1 - Carcinogenic to humans
3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) (208263-65-4)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (Unlabeled))	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
2,3,4,4'-TETRACB (PCB-60) (13C12, 99%) (33025-41-1 (Unlabeled))	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

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<b>3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%) (39635-33-1 (Unlabeled))</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2,3',4',5-TETRACB (PCB-70) (13C12, 99%) (208263-81-4)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>3,4,4',5-TETRACB (PCB-81) (13C12, 99%) (208461-24-9)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) (208263-64-3)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%) (39635-35-3 (Unlabeled))</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) (208263-73-4)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) (235416-30-5)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) (208263-69-8)</b>	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
<b>2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) (208263-62-1)</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>N-NONANE UNLABELED (111-84-2)</b>	
STOT-single exposure	May cause drowsiness or dizziness.
<b>ISOCTANE UNLABELED (540-84-1)</b>	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified
<b>3,3',4,4'-TETRACB UNLABELED (32598-13-3)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).

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<b>3,4,4',5-TETRACB UNLABELED (70362-50-4)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2',3,4,4',5-PENTACB UNLABELED (65510-44-3)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4'-PENTACB UNLABELED (32598-14-4)</b>	
STOT-repeated exposure	May cause damage to organs (eyes, kidneys, liver, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,4,4',5-PENTACB UNLABELED (74472-37-0)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3',4,4',5-PENTACB UNLABELED (31508-00-6)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>3,3',4,4',5,5'-HEXACB UNLABELED (32774-16-6)</b>	
STOT-repeated exposure	May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>3,3',4,4',5-PENTACB UNLABELED (57465-28-8)</b>	
STOT-repeated exposure	May cause damage to organs (liver, kidneys, central nervous system, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4',5,5'-HEPTACB UNLABELED (39635-31-9)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3',4,4',5,5'-HEXACB UNLABELED (52663-72-6)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4',5-HEXACB UNLABELED (69782-90-7)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) (208263-68-7)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).

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<b>3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) (208263-65-4)</b>	
STOT-repeated exposure	May cause damage to organs (kidneys, liver, central nervous system, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (Unlabeled))</b>	
STOT-repeated exposure	May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,4,4'-TETRACB (PCB-60) (13C12, 99%) (33025-41-1 (Unlabeled))</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%) (39635-33-1 (Unlabeled))</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3',4',5-TETRACB (PCB-70) (13C12, 99%) (208263-81-4)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%) (235416-29-2)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>3,4,4',5-TETRACB (PCB-81) (13C12, 99%) (208461-24-9)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) (208263-64-3)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%) (39635-35-3 (Unlabeled))</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled))</b>	
STOT-repeated exposure	May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) (208263-73-4)</b>	
STOT-repeated exposure	May cause damage to organs (liver, Skin) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) (235416-30-5)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Inhalation, oral, Dermal).

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<b>2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) (208263-69-8)</b>	
STOT-repeated exposure	May cause damage to organs (kidneys, liver, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) (208263-62-1)</b>	
STOT-repeated exposure	May cause damage to organs (liver, kidneys, eyes, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral).
<b>2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) (208263-63-2)</b>	
STOT-repeated exposure	May cause damage to organs (liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).

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)

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 : Toxic to aquatic life with long lasting effects.

<b>3,3',4,4'-TETRACB UNLABELED (32598-13-3)</b>	
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

<b>3,4,4',5-TETRACB UNLABELED (70362-50-4)</b>	
LC50 - Fish [1]	Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	Daphnia magna (Water flea) - 48 h
NOEC (chronic)	0.1 mg/l Oncorhynchus mykiss (rainbow trout) - 7 d

<b>2',3,4,4',5-PENTACB UNLABELED (65510-44-3)</b>	
LC50 - Fish [1]	> 0.16 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	> 0.16 mg/l Daphnia magna (Water flea) - 48 h

<b>2,3,3',4,4'-PENTACB UNLABELED (32598-14-4)</b>	
LC50 - Fish [1]	> 0.16 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	> 0.16 mg/l Daphnia magna (Water flea) - 48 h



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<b>2,3,3',4,4',5,5'-HEPTACB UNLABELED (39635-31-9)</b>	
LC50 - Fish [1]	> 0.16 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	> 0.16 mg/l Daphnia magna (Water flea) - 48 h
<b>2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4)</b>	
LC50 - Fish [1]	> 0.16 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	> 0.16 mg/l Daphnia magna (Water flea) - 48 h
<b>2,3',4,4',5,5'-HEXACB UNLABELED (52663-72-6)</b>	
LC50 - Fish [1]	> 0.16 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	> 0.16 mg/l Daphnia magna (Water flea) - 48 h
<b>3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)</b>	
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
LOEC (chronic)	0.5 mg/l mortality: Pimephales promelas (fathead minnow) - 7 d
NOEC (chronic)	0.1 mg/l mortality: Oncorhynchus mykiss (rainbow trout) - 7 d
<b>2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled))</b>	
LC50 - Fish [1]	0.034 mg/l Pimephales promelas (fathead minnow) - 96 h

### 12.2. Persistence and degradability

<b>EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/13C12, 99%) IN ISOCTANE:NONANE</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.

### 12.3. Bioaccumulative potential

<b>EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/13C12, 99%) IN ISOCTANE:NONANE</b>	
Bioaccumulative potential	Not established.
<b>3,3',4,4'-TETRACB UNLABELED (32598-13-3)</b>	
Bioconcentration factor (BCF REACH)	81.5
Bioaccumulative potential	Bioaccumulation: Oryzias latipes - 20 d      Bioconcentration factor (BCF): 81.5.
<b>2,3',4,4',5-PENTACB UNLABELED (31508-00-6)</b>	
Partition coefficient n-octanol/water (Log Pow)	7.12
<b>3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)</b>	
Partition coefficient n-octanol/water (Log Pow)	6.63
Bioaccumulative potential	Bioaccumulation: Oryzias latipes - 20 d      Bioconcentration factor (BCF): 81.5.
<b>3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (Unlabeled))</b>	
Partition coefficient n-octanol/water (Log Pow)	6.7
<b>2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7)</b>	
Partition coefficient n-octanol/water (Log Pow)	7.12

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N-NONANE UNLABELED (111-84-2)	
Partition coefficient n-octanol/water (Log Pow)	5.65
Bioaccumulative potential	Indication of bioaccumulation.
ISOCTANE UNLABELED (540-84-1)	
Partition coefficient n-octanol/water (Log Pow)	4.6
2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled))	
Partition coefficient n-octanol/water (Log Pow)	8.27

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other adverse effects : Disposal must be done according to official regulations. Environmental precautions.  
Other information : Avoid release to the environment.

## 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)

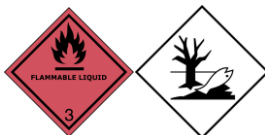
#### DOT

Transport hazard class(es) (DOT) : 3  
Hazard labels (DOT) : 3

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### TDG

Transport hazard class(es) (TDG) : 3

Hazard labels (TDG) : 3



### IMDG

Transport hazard class(es) (IMDG) : 3

Hazard labels (IMDG) : 3



### 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

Dangerous for the environment : Yes

Marine pollutant : Yes



Other information : No supplementary information available.

## 14.6. Special precautions for user

### DOT

UN-No.(DOT) : UN1920

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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
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.
<b>TDG</b>	
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
<b>IMDG</b>	
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
<b>IATA</b>	
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

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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

#### EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/13C12, 99%) IN ISOCTANE:NONANE

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):

Name	CAS-No.	Listing	Commercial status	Flags
3,3',4,4'-TETRACB UNLABELED	32598-13-3	Not present	-	
3,4,4',5-TETRACB UNLABELED	70362-50-4	Not present	-	
2',3,4,4',5-PENTACB UNLABELED	65510-44-3	Not present	-	
2,3,3',4,4'-PENTACB UNLABELED	32598-14-4	Not present	-	
2,3,4,4',5-PENTACB UNLABELED	74472-37-0	Not present	-	
2,3',4,4',5-PENTACB UNLABELED	31508-00-6	Not present	-	
3,3',4,4',5,5'-HEXACB UNLABELED	32774-16-6	Not present	-	
3,3',4,4',5-PENTACB UNLABELED	57465-28-8	Not present	-	
2,3,3',4,4',5,5'-HEPTACB UNLABELED	39635-31-9	Not present	-	
2,3,3',4,4',5-HEXACB UNLABELED	38380-08-4	Not present	-	
2,3',4,4',5,5'-HEXACB UNLABELED	52663-72-6	Not present	-	
2,3,3',4,4',5-HEXACB UNLABELED	69782-90-7	Not present	-	
2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%)	208263-68-7	Not present	-	
3,3',4,4'-TETRACB (PCB-77) (13C12, 99%)	105600-23-5	Not present	-	
3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%)	208263-65-4	Not present	-	
3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%)	32774-16-6 (Unlabeled)	Not present	-	
2,3,4,4'-TETRACB (PCB-60) (13C12, 99%)	33025-41-1 (Unlabeled)	Not present	-	
3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%)	39635-33-1 (Unlabeled)	Not present	-	
2,3',4',5-TETRACB (PCB-70) (13C12, 99%)	208263-81-4	Not present	-	
2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%)	235416-29-2	Not present	-	
3,4,4',5-TETRACB (PCB-81) (13C12, 99%)	208461-24-9	Not present	-	
2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%)	104130-40-7	Not present	-	

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Name	CAS-No.	Listing	Commercial status	Flags
2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%)	208263-64-3	Not present	-	
2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%)	39635-35-3 (Unlabeled)	Not present	-	
N-NONANE UNLABELED	111-84-2	Present	Active	T
ISOCTANE UNLABELED	540-84-1	Present	Active	
2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%)	35065-30-6 (Unlabeled)	Not present	-	
2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%)	208263-73-4	Not present	-	
2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%)	235416-30-5	Not present	-	
2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%)	208263-69-8	Not present	-	
2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%)	208263-62-1	Not present	-	
2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%)	208263-63-2	Not present	-	

<b>3,3',4,4'-TETRACB UNLABELED (32598-13-3)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>3,4,4',5-TETRACB UNLABELED (70362-50-4)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>2',3,4,4',5-PENTACB UNLABELED (65510-44-3)</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>2,3,3',4,4'-PENTACB UNLABELED (32598-14-4)</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>2,3,4,4',5-PENTACB UNLABELED (74472-37-0)</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>2,3',4,4',5-PENTACB UNLABELED (31508-00-6)</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

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<b>3,3',4,4',5,5'-HEXACB UNLABELED (32774-16-6)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>3,3',4,4',5-PENTACB UNLABELED (57465-28-8)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>2,3,3',4,4',5,5'-HEPTACB UNLABELED (39635-31-9)</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>2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4)</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>2,3',4,4',5,5'-HEXACB UNLABELED (52663-72-6)</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>2,3,3',4,4',5-HEXACB UNLABELED (69782-90-7)</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>2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) (208263-68-7)</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>3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) (208263-65-4)</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

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<b>3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (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

<b>2,3,4,4'-TETRACB (PCB-60) (13C12, 99%) (33025-41-1 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

<b>3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%) (39635-33-1 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

<b>2,3',4',5-TETRACB (PCB-70) (13C12, 99%) (208263-81-4)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

<b>2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%) (235416-29-2)</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	Immediate (acute) health hazard Delayed (chronic) health hazard

<b>3,4,4',5-TETRACB (PCB-81) (13C12, 99%) (208461-24-9)</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

<b>2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7)</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',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) (208263-64-3)</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>2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%) (39635-35-3 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302



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

<b>ISOCTANE UNLABELED (540-84-1)</b>	
Not subject to reporting requirements of the United States SARA Section 313 Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb
SARA Section 311/312 Hazard Classes	Fire hazard Delayed (chronic) health hazard

<b>2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (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

<b>2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) (208263-73-4)</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>2,3,3',4,4',5,5'-HEXACB (PCB-157) (13C12, 99%) (235416-30-5)</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>2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) (208263-69-8)</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>2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) (208263-62-1)</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	Immediate (acute) health hazard Delayed (chronic) health hazard

<b>2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) (208263-63-2)</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

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### 15.2. International regulations

#### CANADA

##### **3,3',4,4'-TETRACB UNLABELED (32598-13-3)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **3,4,4',5-TETRACB UNLABELED (70362-50-4)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2',3,4,4',5-PENTACB UNLABELED (65510-44-3)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3,3',4,4'-PENTACB UNLABELED (32598-14-4)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3,4,4',5-PENTACB UNLABELED (74472-37-0)**

Listed on the Canadian DSL (Domestic Substances List)

##### **2,3',4,4',5-PENTACB UNLABELED (31508-00-6)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **3,3',4,4',5,5'-HEXACB UNLABELED (32774-16-6)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **3,3',4,4',5-PENTACB UNLABELED (57465-28-8)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3,3',4,4',5,5'-HEPTACB UNLABELED (39635-31-9)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3',4,4',5,5'-HEXACB UNLABELED (52663-72-6)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3,3',4,4',5'-HEXACB UNLABELED (69782-90-7)**

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

##### **2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) (208263-68-7)**

Listed on the Canadian DSL (Domestic Substances List)

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### 3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

### 3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) (208263-65-4)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

### 3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

### 2,3',4',5-TETRACB (PCB-70) (13C12, 99%) (208263-81-4)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

### 2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%) (235416-29-2)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

### 3,4,4',5-TETRACB (PCB-81) (13C12, 99%) (208461-24-9)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

### 2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7)

Listed on the Canadian DSL (Domestic Substances List)

### 2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) (208263-64-3)

Listed on the Canadian DSL (Domestic Substances List)

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

Listed on the Canadian DSL (Domestic Substances List)

### ISOCTANE UNLABELED (540-84-1)

Listed on the Canadian DSL (Domestic Substances List)

### 2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) (208263-73-4)

Listed on the Canadian DSL (Domestic Substances List)

### 2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) (235416-30-5)

Listed on the Canadian DSL (Domestic Substances List)

### 2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) (208263-69-8)

Listed on the Canadian DSL (Domestic Substances List)

### 2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) (208263-62-1)

Listed on the Canadian DSL (Domestic Substances List)

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### 2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) (208263-63-2)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

### 3,3',4,4',5-PENTACB UNLABELED (57465-28-8)

Listed on IARC (International Agency for Research on Cancer)

### ISOCTANE UNLABELED (540-84-1)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

#### 15.3. US State regulations

### 3,3',4,4'-TETRACB UNLABELED (32598-13-3)

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		

### 3,4,4',5-TETRACB UNLABELED (70362-50-4)

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',3,4,4',5-PENTACB UNLABELED (65510-44-3)

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		

### 2,3,3',4,4'-PENTACB UNLABELED (32598-14-4)

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		

# EN-1948-4 WHO PCB CALIBRATION SERIES CS3 (UNLABELED/13C12, 99%) IN ISOCTANE:NONANE

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2,3,4,4',5-PENTACB UNLABELED (74472-37-0)					
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		

2,3',4,4',5-PENTACB UNLABELED (31508-00-6)					
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		

3,3',4,4',5,5'-HEXACB UNLABELED (32774-16-6)					
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		

3,3',4,4',5-PENTACB UNLABELED (57465-28-8)					
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		

2,3,3',4,4',5,5'-HEPTACB UNLABELED (39635-31-9)					
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		

2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4)					
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		

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<b>2,3',4,4',5,5'-HEXACB UNLABELED (52663-72-6)</b>					
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		

<b>2,3,3',4,4',5'-HEXACB UNLABELED (69782-90-7)</b>					
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		

<b>2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) (208263-68-7)</b>					
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		

<b>3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5)</b>					
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		

<b>3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) (208263-65-4)</b>					
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		

<b>3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (Unlabeled))</b>					
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		

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<b>2,3,4,4'-TETRACB (PCB-60) (13C12, 99%) (33025-41-1 (Unlabeled))</b>					
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	Yes		

<b>3,3',4,5,5'-PENTACB (PCB-127) (13C12, 99%) (39635-33-1 (Unlabeled))</b>					
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		

<b>2,3',4',5-TETRACB (PCB-70) (13C12, 99%) (208263-81-4)</b>					
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		

<b>2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%) (235416-29-2)</b>					
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		

<b>3,4,4',5-TETRACB (PCB-81) (13C12, 99%) (208461-24-9)</b>					
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		

<b>2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7)</b>					
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		

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<b>2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) (208263-64-3)</b>					
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		

<b>2,3,3',4,5,5'-HEXACB (PCB-159) (13C12, 99%) (39635-35-3 (Unlabeled))</b>					
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		

<b>2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled))</b>					
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		

<b>2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) (208263-73-4)</b>					
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		

<b>2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) (235416-30-5)</b>					
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		

<b>2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) (208263-69-8)</b>					
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		



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2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) (208263-62-1)					
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		

2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) (208263-63-2)					
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		

Component	State or local regulations
2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%)(208263-68-7)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
3,3',4,4'-TETRACB (PCB-77) (13C12, 99%)(105600-23-5)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%)(208263-65-4)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%)(32774-16-6 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%)(235416-29-2)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
3,4,4',5-TETRACB (PCB-81) (13C12, 99%)(208461-24-9)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%)(104130-40-7)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%)(208263-64-3)	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
ISOCTANE UNLABELED(540-84-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%)(208263-73-4)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%)(235416-30-5)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%)(208263-69-8)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%)(208263-62-1)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List

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Component	State or local regulations
2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%)(208263-63-2 )	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List

### SECTION 16: Other information

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Revision date : 09/18/2023

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	
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
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
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	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.