



CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/12/2014

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Version: 1.0

EC-5367-200X

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

1.1. Product identifier

Product form : Mixtures
Product name : CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE
Product code : EC-5367-200X

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only.
Industrial.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flam. Liq. 3 H226
Acute Tox. 4 (Inhalation:dust,mist) H332
Skin Irrit. 2 H315
Eye Irrit. 2 H319
STOT SE 3 H336
Asp. Tox. 1 H304

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R20
Xn; R65
R10

Full text of R-phrases: see section 16

Classification (GHS-US)

Flam. Liq. 3 H226
Acute Tox. 4 (Inhalation:dust,mist) H332
Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 3 H336
Asp. Tox. 1 H304

Adverse physicochemical, human health and environmental effects

Central Nervous System.

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2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazardous ingredients

: N-NONANE UNLABELED

Hazard statements (CLP)

: H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P261 - Avoid breathing 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

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

Precautionary statements (GHS-US)

: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof 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/physician
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P331 - If swallowed, do NOT induce vomiting
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use Alcohol resistant foam., Dry chemical., Water spray, Carbon dioxide. for extinction
P403+P233 - Store in a well-ventilated place. Keep container tightly closed

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P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|---|---|---------|--|
| N-NONANE UNLABELED | (CAS No) 111-84-2 (EC no) 203-913-4 | 99.9958 | R10 Xn; R20 Xn; R65 R67 |
| DECACB (PCB-209) (13C12, 99%) | (CAS No) 105600-27-9 (EC no) 218-115-1 | 0.00021 | N; R50 |
| 2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) | (CAS No) 35065-30-6 (Unlabeled) (EC index no) 602-039-00-4 | 0.00021 | N; R50/53 R33 |
| 2,3,3',4,4',5,5'-HEPTACB (PCB-189) (13C12, 99%) | (CAS No) 208263-73-4 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,2',3,3',4,4',5,5'-OCTACB (PCB-194) (13C12, 98%) | (CAS No) 208263-74-5 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,2',3,3',4,4',5,5',6-NONACB (PCB-206) (13C12, 99%) | (CAS No) 208263-75-6 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 |
| 2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) | (CAS No) 35065-29-3 (Unlabeled) | 0.00021 | N; R50/53 |
| 2,2',3,3',5,5',6-HEPTACB (PCB-178) (13C12, 99%) | (CAS No) 232919-67-4 (EC index no) 602-039-00-4 | 0.00021 | N; R50/53 Xn; R21/22 |
| 2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) | (CAS No) 208263-68-7 (EC index no) 602-039-00-4 | 0.00021 | N; R50/53 Xn; R48/21/22 R33 |
| 2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%) | (CAS No) 208263-66-5 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) | (CAS No) 235416-30-5 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,3',4,4',5,5'-HEXACB (PCB-167) (13C12, 99%) | (CAS No) 208263-69-8 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,3,3',4,4'-PENTACB (PCB-105) (13C12, 99%) | (CAS No) 208263-62-1 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 Xi; R41 N; R50/53 R33 |
| 2,2',3,3',4,4'-HEXACB (PCB-128) (13C12, 99%) | (CAS No) 38380-07-3 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) | (CAS No) 208263-80-3 (EC index no) 602-039-00-4 | 0.00021 | Carc.Cat.1; R45 N; R51/53 Xn; R48/20/21/22 |
| 2,4,4'-TRICB (PCB-28) (13C12, 99%) | (CAS No) 208263-76-7 (EC no) 230-293-2 (EC index no) 602-039-00-4 | 0.00021 | Xn; R20/21/22 N; R50/53 R48 |

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| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|--|---|---------|--|
| 2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) | (CAS No) 185376-58-3 (EC index no) 602-039-00-4 | 0.00021 | N; R50/53 R33 R48 |
| 2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) | (CAS No) 104130-39-4 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) | (CAS No) 104130-40-7 (EC no) 215-648-1 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) | (CAS No) 208263-64-3 (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |
| 2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) | (CAS No) 208263-63-2 (Unlabeled) (EC index no) 602-039-00-4 | 0.00021 | Xn; R48/20/21/22 N; R50/53 R33 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---|---|---------|--|
| N-NONANE UNLABELED | (CAS No) 111-84-2 (EC no) 203-913-4 | 99.9958 | 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 |
| DECACB (PCB-209) (13C12, 99%) | (CAS No) 105600-27-9 (EC no) 218-115-1 | 0.00021 | Aquatic Acute 1, H400 |
| 2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) | (CAS No) 35065-30-6 (Unlabeled) (EC index no) 602-039-00-4 | 0.00021 | 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 (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,3',4,4',5,5'-OCTACB (PCB-194) (13C12, 98%) | (CAS No) 208263-74-5 (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,3',4,4',5,5',6-NONACB (PCB-206) (13C12, 99%) | (CAS No) 208263-75-6 (EC index no) 602-039-00-4 | 0.00021 | Carc. 1B, H350 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) | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,3',5,5',6-HEPTACB (PCB-178) (13C12, 99%) | (CAS No) 232919-67-4 (EC index no) 602-039-00-4 | 0.00021 | Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) | (CAS No) 208263-68-7 (EC index no) 602-039-00-4 | 0.00021 | 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 (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3,3',4,4',5'-HEXACB (PCB-157) (13C12, 99%) | (CAS No) 235416-30-5 (EC index no) 602-039-00-4 | 0.00021 | 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 (EC index no) 602-039-00-4 | 0.00021 | 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 (EC index no) 602-039-00-4 | 0.00021 | Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,3',4,4'-HEXACB (PCB-128) (13C12, 99%) | (CAS No) 38380-07-3 (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) | (CAS No) 208263-80-3 (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

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| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|---|---------|---|
| 2,4,4'-TRICB (PCB-28) (13C12, 99%) | (CAS No) 208263-76-7 (EC no) 230-293-2 (EC index no) 602-039-00-4 | 0.00021 | 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 (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',4,5,5'-PENTACB (PCB-101) (13C12, 99%) | (CAS No) 104130-39-4 (EC index no) 602-039-00-4 | 0.00021 | 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 (EC no) 215-648-1 (EC index no) 602-039-00-4 | 0.00021 | 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 (EC index no) 602-039-00-4 | 0.00021 | 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 (Unlabeled) (EC index no) 602-039-00-4 | 0.00021 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

| Name | Product identifier | % | Classification (GHS-US) |
|--------------------|--------------------|---------|---|
| N-NONANE UNLABELED | (CAS No) 111-84-2 | 99.9958 | Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 Asp. Tox. 1, H304 |

Full text of R-, H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). |
| First-aid measures after inhalation | : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell. |
| First-aid measures after skin contact | : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label). |
| First-aid measures after eye contact | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Rinse cautiously with water for several minutes. Get medical advice/attention. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. |

4.2. Most important symptoms and effects, both acute and delayed

| | |
|--------------------------------------|---|
| Symptoms/injuries after inhalation | : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness. |
| Symptoms/injuries after skin contact | : Causes skin irritation. |
| Symptoms/injuries after eye contact | : Causes serious eye irritation. |

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--|
| suitable extinguishing media | : Foam. Dry powder. Carbon dioxide. Water spray. Sand. |
| unsuitable extinguishing media | : Do not use a heavy water stream. |

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid breathing dust, mist or spray.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Use only outdoors or in a well-ventilated area. Avoid breathing dust, mist or spray.

Hygiene measures : Wash Both hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible products : Strong bases. strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| N-NONANE UNLABELED (111-84-2) | | |
|---|-------------------------------------|--|
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 200.000000000 ppm Central Nervous System impairment. |
| 2,2',5,5'-TETRACB (PCB-52) (13C12, 99%) (208263-80-3) | | |
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 0.500000000 mg/m ³ |

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

Other information : When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

The properties listed below are for the solvent, the main component of this mixture.

Physical state : Liquid

Appearance : Liquid.

Molecular mass : 128.3

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| | |
|---|--|
| Color | : Colorless. |
| Odor | : characteristic. |
| Odor threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : -53 °C (- 63 °F) - lit |
| Boiling point | : 151 °C (304 °F) - lit |
| Flash point | : 31.0 °C (87.8 °F) - closed cup |
| Self ignition temperature | : 205 °C (401 °F) |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Non flammable. |
| Vapor pressure | : 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F) |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Solubility | : Water: 0 % |
| Log Pow | : 5.65 |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |
| Explosive limits | : 0.87 - 2.9 % (V) |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

| CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE | |
|---|----------------------------|
| ATE (dust, mist) | 1.500 mg/l/4h |
| N-NONANE UNLABELED (111-84-2) | |
| LC50 inhalation rat (ppm) | 3200 ppm/4h |
| ATE (dust, mist) | 1.500 mg/l/4h |
| 2,2',3,3',5,5',6-HEPTACB (PCB-178) (13C12, 99%) (232919-67-4) | |
| ATE (oral) | 500.000 mg/kg body weight |
| ATE (dermal) | 1100.000 mg/kg body weight |

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.

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| | |
|---|---|
| Respiratory or skin sensitization | : Not classified Based on available data, the classification criteria are not met |
| Germ cell mutagenicity | : Not classified Based on available data, the classification criteria are not met |
| Carcinogenicity | : Not classified Based on available data, the classification criteria are not met |
| Reproductive toxicity | : Not classified Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure) | : May cause drowsiness or dizziness. |
| Specific target organ toxicity (repeated exposure) | : Not classified Based on available data, the classification criteria are not met |
| Aspiration hazard | : May be fatal if swallowed and enters airways. Based on available data, the classification criteria are not met |
| Potential Adverse human health effects and symptoms | : Harmful if inhaled. |
| Symptoms/injuries after inhalation | : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness. |
| Symptoms/injuries after skin contact | : Causes skin irritation. |
| Symptoms/injuries after eye contact | : Causes serious eye irritation. |

SECTION 12: Ecological information

12.1. Toxicity

| 2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled)) | |
|---|---|
| LC50 fish 1 | 0.034 mg/l Pimephales promelas (fathead minnow) - 96 h |
| 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 Daphnia 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 Pimephales promelas (fathead minnow) -96h |
| EC50 Daphnia 1 | > 0.16 mg/l Daphnia magna (Water flea) -48h |
| 2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3) | |
| LC50 fish 1 | Pimephales promelas (fathead minnow) - 96 h |
| EC50 Daphnia 1 | Daphnia magna (Water flea) - 48 h |

12.2. Persistence and degradability

| CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE | |
|---|------------------|
| Persistence and degradability | Not established. |
| 2,2',3,3',4,4'-HEXACB (PCB-128) (13C12, 99%) (38380-07-3) | |
| Persistence and degradability | Not available. |

12.3. Bioaccumulative potential

| CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE | |
|---|--------------------------------|
| Log Pow | 5.65 |
| Bioaccumulative potential | Not established. |
| N-NONANE UNLABELED (111-84-2) | |
| Log Pow | 5.65 |
| Bioaccumulative potential | Indication of bioaccumulation. |
| 2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled)) | |
| Log Pow | 8.27 |
| 2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled)) | |
| Log Pow | 8.27 |

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| | |
|--|----------------|
| 2,2',3,3',4,4'-HEXACB (PCB-128) (13C12, 99%) (38380-07-3) | |
| Bioaccumulative potential | Not available. |

| | |
|---|------|
| 2,2',4,4',5,5'-HEXACB (PCB-153) (13C12, 99%) (185376-58-3) | |
| Log Pow | 7.75 |

| | |
|---|------|
| 2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7) | |
| Log Pow | 7.12 |

12.4. Mobility in soil

| | |
|--|----------------|
| 2,2',3,3',4,4'-HEXACB (PCB-128) (13C12, 99%) (38380-07-3) | |
| Ecology - soil | Not available. |

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Comply with applicable regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

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

14.1. UN number

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

14.2. UN proper shipping name

DOT Proper Shipping Name : Nonanes

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 242

Marine pollutant : No

14.3. Additional information

Other information : No supplementary information available.

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Overland transport

Packing group (ADR) : III
Class (ADR) : 3 - Flammable liquid
Hazard identification number (Kemler No.) : 30
Classification code (ADR) : F1
Danger labels (ADR) : 3 - Flammable liquids



Orange plates :

Tunnel restriction code : D/E
Limited quantities (ADR) : 5L
EAC : 3Y
Excepted quantities (ADR) : E1

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
MFAG-No : 128

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 60 L
(49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 : 220 L
CFR 175.75)

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE

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

N-NONANE UNLABELED (111-84-2)

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

15.2. International regulations

CANADA

CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE

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

15.2.1. National regulations

No additional information available

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15.3. US State regulations

CDC PCB SPIKING STANDARD (13C12, 99%) 200X STOCK IN NONANE()

| | |
|----------------------------|---|
| State or local regulations | U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |
|----------------------------|---|

N-NONANE UNLABELED (111-84-2)

| |
|---|
| U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |
|---|

SECTION 16: Other information

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 : None.

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

| | |
|-------------------------------------|---|
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal) Category 4 |
| Acute Tox. 4 (Inhalation) | Acute toxicity (inhalation) Category 4 |
| Acute Tox. 4 (Inhalation:dust,mist) | Acute toxicity (inhalation:dust,mist) Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Aquatic Acute 1 | Hazardous to the aquatic environment - Acute Hazard Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment - Chronic Hazard Category 1 |
| Asp. Tox. 1 | Aspiration hazard Category 1 |
| Carc. 1B | Carcinogenicity Category 1B |
| Eye Dam. 1 | Serious eye damage/eye irritation Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation Category 2 |
| Flam. Liq. 3 | Flammable liquids Category 3 |
| Skin Irrit. 2 | skin corrosion/irritation Category 2 |
| STOT RE 2 | Specific target organ toxicity (repeated exposure) Category 2 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H226 | Flammable liquid and vapor |
| H302 | Harmful if swallowed |
| H304 | May be fatal if swallowed and enters airways |
| H312 | Harmful in contact with skin |
| H315 | Causes skin irritation |
| H318 | Causes serious eye damage |
| H319 | Causes serious eye irritation |
| H332 | Harmful if inhaled |
| H336 | May cause drowsiness or dizziness |
| H350 | May cause cancer |
| H373 | May cause damage to organs through prolonged or repeated exposure |
| H400 | Very toxic to aquatic life |
| H410 | Very toxic to aquatic life with long lasting effects |
| R10 | Flammable |
| R20 | Harmful by inhalation |
| R20/21/22 | Harmful by inhalation, in contact with skin and if swallowed |
| R21/22 | Harmful in contact with skin and if swallowed |
| R33 | Danger of cumulative effects |
| R41 | Risk of serious damage to eyes |
| R45 | May cause cancer |
| R48 | Danger of serious damage to health by prolonged exposure |
| R48/20/21/22 | Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed |

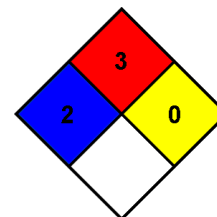
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| | |
|-----------|---|
| R48/21/22 | Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed |
| R50 | Very toxic to aquatic organisms |
| R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment |
| R51/53 | Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment |
| R65 | Harmful: may cause lung damage if swallowed |
| R67 | Vapors may cause drowsiness and dizziness |
| N | Dangerous for the environment |
| Xi | Irritant |
| Xn | Harmful |

- NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
- NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

- Health : 2 Moderate Hazard - Temporary or minor injury may occur
- Flammability : 3 Serious Hazard
- Physical : 0 Minimal Hazard

CIL Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product