



PCB CALIBRATION SOLUTION CS4 (UNLABELED/¹³C12, 99%)

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: 04/11/2014

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Supersedes: 04/11/2014

Version: 2.0

EC-4939-CS4

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

1.1. Product identifier

Product form : Mixtures
Product name : PCB CALIBRATION SOLUTION CS4 (UNLABELED/¹³C12, 99%)
Product code : EC-4939-CS4

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) H332
Skin Irrit. 2 H315
Eye Irrit. 2 H319
STOT SE 3 H336
Asp. Tox. 1 H304
Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

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

F; R11
Xn; R65
Xi; R38
N; R51/53
R67

Full text of R-phrases: see section 16

Classification (GHS-US)

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
Aquatic Acute 2 H401
Aquatic Chronic 2 H411

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Adverse physicochemical, human health and environmental effects

Central Nervous System.

2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

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
H411 - Toxic to aquatic life with long lasting effects

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
P273 - Avoid release to the environment

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
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, 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
P273 - Avoid release to the environment
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)

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Safety Data Sheet

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P331 - If swallowed, do NOT induce vomiting
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use Alcohol resistant foam., Carbon dioxide., Dry chemical., Water spray for extinction
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

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 | 95.171946 | R10 Xn; R20 Xn; R65 R67 Xi; R38 |
| ISOOCTANE UNLABELED | (CAS No) 540-84-1 (EC no) 208-759-1 (EC index no) 601-009-00-8 | 4.827664 | Xi; R38 N; R50/53 R67 F; R11 |
| 3,3',4,4',5,5'-HEXACB UNLABELED | (CAS No) 32774-16-6 (EC index no) 602-039-00-4 | 0.000014 | N; R50/53 Xn; R22 |
| 3,3',4,4',5-PENTACB UNLABELED | (CAS No) 57465-28-8 (EC index no) 602-039-00-4 | 0.000014 | R33 |
| 3,3',4,4'-TETRACB UNLABELED | (CAS No) 32598-13-3 (EC index no) 602-039-00-4 | 0.000014 | R33 N; R50/53 |
| 3,4,4',5-TETRACB UNLABELED | (CAS No) 70362-50-4 (EC index no) 602-039-00-4 | 0.000014 | N; R50/53 R33 |
| 2,2',3,4,4',5,5'-HEPTACB UNLABELED | (CAS No) 35065-29-3 | 0.000014 | R33 |
| 2,3,3',4,4',5,5'-HEPTACB UNLABELED | (CAS No) 39635-31-9 (EC index no) 602-039-00-4 | 0.000014 | R33 |
| 2,3,3',4,4',5-HEXACB UNLABELED | (CAS No) 38380-08-4 (EC index no) 602-039-00-4 | 0.000014 | R33 |
| 2',3,4,4',5-PENTACB UNLABELED | (CAS No) 65510-44-3 (EC index no) 602-039-00-4 | 0.000014 | R33 |
| 2,3',4,4',5,5'-HEXACB UNLABELED | (CAS No) 52663-72-6 (EC index no) 602-039-00-4 | 0.000014 | R33 |
| 2,3,3',4,4',5'-HEXACB UNLABELED | (CAS No) 69782-90-7 (EC index no) 602-039-00-4 | 0.000014 | R33 |
| 2,2',3,3',4,4',5-HEPTACB UNLABELED | (CAS No) 35065-30-6 | 0.000014 | R33 |
| 2,3,3',4,4'-PENTACB UNLABELED | (CAS No) 32598-14-4 (EC index no) 602-039-00-4 | 0.000014 | Xn; R22 R33 N; R50/53 |
| 2,3,4,4',5-PENTACB UNLABELED | (CAS No) 74472-37-0 (EC index no) 602-039-00-4 | 0.000014 | Xn; R22 N; R50/53 |
| 2,3',4,4',5-PENTACB UNLABELED | (CAS No) 31508-00-6 (EC no) 215-648-1 (EC index no) 602-039-00-4 | 0.000014 | Xn; R22 |
| 2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) | (CAS No) 35065-29-3 (Unlabeled) | 0.000014 | N; R50/53 |
| 2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) | (CAS No) 208263-68-7 (EC index no) 602-039-00-4 | 0.000014 | N; R50/53 Xn; R48/21/22 R33 |

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Safety Data Sheet

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| Name | Product identifier | % | Classification according to Directive 67/548/EEC |
|---|---|----------|--|
| 3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) | (CAS No) 105600-23-5 (EC index no) 602-039-00-4 | 0.000014 | Xn; R48/20 N; R50/53 |
| 3,3',4,4',5-PENTACB (PCB-126) (13C12, 99%) | (CAS No) 208263-65-4 (EC index no) 602-039-00-4 | 0.000014 | Xn; R48/20 N; R50/53 R33 |
| 3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) | (CAS No) 32774-16-6 (Unlabeled) (EC index no) 602-039-00-4 | 0.000014 | N; R50/53 Xn; R48/20/21/22 |
| 3,4,4',5-TETRACB (PCB-81) (13C12, 99%) | (CAS No) 208461-24-9 (EC index no) 602-039-00-4 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | Xn; R48/20/21/22 N; R50/53 R33 |
| 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | Xn; R48/20/21/22 Xi; R41 N; R50/53 R33 |
| 2,3,4,4',5-PENTACB (PCB-114) (13C12, 99%) | (CAS No) 208263-63-2 (EC index no) 602-039-00-4 | 0.000014 | Xn; R48/20/21/22 N; R50/53 R33 |

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|---------------------------------|--|-----------|---|
| N-NONANE UNLABELED | (CAS No) 111-84-2 (EC no) 203-913-4 | 95.171946 | Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304 |
| ISOCTANE UNLABELED | (CAS No) 540-84-1 (EC no) 208-759-1 (EC index no) 601-009-00-8 | 4.827664 | Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,3',4,4',5,5'-HEXACB UNLABELED | (CAS No) 32774-16-6 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,3',4,4',5-PENTACB UNLABELED | (CAS No) 57465-28-8 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,3',4,4'-TETRACB UNLABELED | (CAS No) 32598-13-3 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,4,4',5-TETRACB UNLABELED | (CAS No) 70362-50-4 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

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|---|---|----------|---|
| 2,2',3,4,4',5,5'-HEPTACB UNLABELED | (CAS No) 35065-29-3 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2',3,4,4',5-PENTACB UNLABELED | (CAS No) 65510-44-3 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3',4,4',5,5'-HEXACB UNLABELED | (CAS No) 52663-72-6 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3,3',4,4',5'-HEXACB UNLABELED | (CAS No) 69782-90-7 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,3',4,4',5-HEPTACB UNLABELED | (CAS No) 35065-30-6 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 |
| 2,3,3',4,4'-PENTACB UNLABELED | (CAS No) 32598-14-4 (EC index no) 602-039-00-4 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3',4,4',5-PENTACB UNLABELED | (CAS No) 31508-00-6 (EC no) 215-648-1 (EC index no) 602-039-00-4 | 0.000014 | 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) | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | 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) (EC index no) 602-039-00-4 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) | (CAS No) 104130-40-7 (EC no) 215-648-1 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) | (CAS No) 208263-64-3 (EC index no) 602-039-00-4 | 0.000014 | 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) (EC index no) 602-039-00-4 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 (EC index no) 602-039-00-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

Safety Data Sheet

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| N-NONANE UNLABELED | (CAS No) 111-84-2 | 95.171946 | Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 Asp. Tox. 1, H304 |
| ISOCTANE UNLABELED | (CAS No) 540-84-1 | 4.827664 | Flam. Liq. 1, H224 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,3',4,4',5,5'-HEXACB UNLABELED | (CAS No) 32774-16-6 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,3',4,4',5-PENTACB UNLABELED | (CAS No) 57465-28-8 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,3',4,4'-TETRACB UNLABELED | (CAS No) 32598-13-3 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 3,4,4',5-TETRACB UNLABELED | (CAS No) 70362-50-4 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,4,4',5,5'-HEPTACB UNLABELED | (CAS No) 35065-29-3 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2',3,4,4',5-PENTACB UNLABELED | (CAS No) 65510-44-3 | 0.000014 | 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 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3,3',4,4',5'-HEXACB UNLABELED | (CAS No) 69782-90-7 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,2',3,3',4,4',5-HEPTACB UNLABELED | (CAS No) 35065-30-6 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3,3',4,4'-PENTACB UNLABELED | (CAS No) 32598-14-4 | 0.000014 | 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 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3',4,4',5-PENTACB UNLABELED | (CAS No) 31508-00-6 | 0.000014 | 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) | 0.000014 | STOT SE 2, H371 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| 2,3,3',4,4',5-HEXACB (PCB-156) (13C12, 99%) | (CAS No) 208263-68-7 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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) | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

| Name | Product identifier | % | Classification (GHS-US) |
|---|---------------------------------|----------|---|
| 2',3,4,4',5-PENTACB (PCB-123) (13C12, 99%) | (CAS No) 208263-64-3 | 0.000014 | 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) | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | 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 | 0.000014 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |

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 | : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. 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. Get medical advice/attention. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. |

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. |
| Symptoms/injuries after ingestion | : May be fatal if swallowed and enters airways. |

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

| | |
|------------------|---|
| Fire hazard | : Highly flammable liquid and vapor. |
| Explosion hazard | : May form flammable/explosive vapor-air mixture. |
| Reactivity | : Vapors may form explosive mixture with air. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Use water spray to cool unopened containers. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

| | |
|------------------|--|
| General measures | : Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking. |
|------------------|--|

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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 further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment : Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.

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

Additional hazards when processed : Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent build up of electrostatic charge.
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. No naked lights. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Avoid breathing dust, mist or spray.
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) | | |
|---|-----------------|--|
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 200.000000000 ppm Central Nervous System impairment. |
| N-NONANE UNLABELED (111-84-2) | | |
| Italy - Portugal - USA ACGIH | ACGIH TWA (ppm) | 200.000000000 ppm Central Nervous System impairment. |

8.2. Exposure controls

Personal protective equipment : Protective clothing. Protective goggles. Self-contained breathing apparatus. Gloves.



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. Wear respiratory protection.
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 g/mol

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

| | |
|---|--|
| 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) | : Highly flammable liquid and vapor |
| Vapor pressure | : 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F) |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 0.718 g/ml at 25 °C (77 °F) |
| 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

Vapors may form explosive mixture with air.

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Avoid Heat, Flames and Sparks.

10.5. Incompatible materials

strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

| PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) | |
|---|------------------------------------|
| LC50 inhalation rat (mg/l) | 23760 mg/m ³ male - 4 h |
| LC50 inhalation rat (ppm) | 3200 ppm/4h |
| ATE (gases) | 3200.000 ppmV/4h |
| ATE (vapors) | 11.000 mg/l/4h |
| ATE (dust, mist) | 1.500 mg/l/4h |

| N-NONANE UNLABELED (111-84-2) | |
|-------------------------------|------------------------------------|
| LC50 inhalation rat (mg/l) | 23760 mg/m ³ male - 4 h |
| LC50 inhalation rat (ppm) | 3200 ppm/4h |
| ATE (gases) | 3200.000 ppmV/4h |
| ATE (vapors) | 11.000 mg/l/4h |

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

| N-NONANE UNLABELED (111-84-2) | |
|-------------------------------|----------------|
| ATE (dust, mist) | 23.760 mg/l/4h |

| 3,4,4',5-TETRACB UNLABELED (70362-50-4) | |
|---|------------------------------------|
| | LD50 - Oral - guinea pig - 1 mg/kg |

| | |
|---|---|
| Skin corrosion/irritation | : Causes skin irritation. Skin - rat - Skin irritation - Draize test |
| Serious eye damage/irritation | : Causes serious eye irritation. No data available |
| Respiratory or skin sensitization | : Not available Based on available data, the classification criteria are not met |
| Germ cell mutagenicity | : Not available 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 available Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure) | : May cause drowsiness or dizziness. 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. |
| 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. |
| Symptoms/injuries after ingestion | : May be fatal if swallowed and enters airways. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

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

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

| 2,2',3,3',4,4',5-HEPTACB UNLABELED (35065-30-6) | |
|---|--|
| LC50 fish 1 | 0.034 mg/l Pimephales promelas (fathead minnow) - 96 h |

| 3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5) | |
|---|--|
| LC50 fish 1 | Pimephales promelas (fathead minnow) - 96 h |
| EC50 Daphnia 1 | Daphnia magna (Water flea) - 48 h |
| NOEC (chronic) | 0.1 mg/l Oncorhynchus mykiss (rainbow trout) - 7 d |

| 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 |

12.2. Persistence and degradability

| PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) | |
|---|---|
| Persistence and degradability | May cause long-term adverse effects in the environment. |

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

12.3. Bioaccumulative potential

| PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) | |
|--|--|
| Log Pow | 5.65 |
| Bioaccumulative potential | Not established. |
| N-NONANE UNLABELED (111-84-2) | |
| Log Pow | 5.65 |
| Bioaccumulative potential | Indication of bioaccumulation. |
| 3,3',4,4'-TETRACB UNLABELED (32598-13-3) | |
| Bioconcentration factor (BCF REACH) | 81.5 |
| Bioaccumulative potential | Bioaccumulation: Oryzias latipes - 20 d Bioconcentration factor (BCF): 81.5. |
| 2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled)) | |
| Log Pow | 8.27 |
| 2,3',4,4',5-PENTACB UNLABELED (31508-00-6) | |
| Log Pow | 7.12 |
| 3,3',4,4'-TETRACB (PCB-77) (13C12, 99%) (105600-23-5) | |
| Bioaccumulative potential | Bioaccumulation: Oryzias latipes - 20 d Bioconcentration factor (BCF): 81.5. |
| 3,3',4,4',5,5'-HEXACB (PCB-169) (13C12, 99%) (32774-16-6 (Unlabeled)) | |
| Log Pow | 6.7 |
| 2,3',4,4',5-PENTACB (PCB-118) (13C12, 98%) (104130-40-7) | |
| Log Pow | 7.12 |
| 2,2',3,3',4,4',5-HEPTACB (PCB-170) (13C12, 99%) (35065-30-6 (Unlabeled)) | |
| Log Pow | 8.27 |

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

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



PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

| | |
|---|--|
| 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 |

14.3. Additional information

Other information : No supplementary information available.

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 : An orange rectangular label with a black border. It is divided into two horizontal sections. The top section contains the number '30' and the bottom section contains the number '1920'.

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

Transport by sea

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

Air transport

| | |
|--|---------------------|
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 60 L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 220 L |
| Civil Aeronautics Law | : Flammable liquids |

14.4. Environmental hazards

Dangerous for the environment : A white diamond-shaped hazard label with a black border. Inside the diamond is a black icon of a tree with a bird perched on a branch, and a dead tree below it.

Other information : No supplementary information available.

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

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

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%)

| | |
|-------------------------------------|--|
| 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 |
|-------------------------------------|--|

ISOOCTANE UNLABELED (540-84-1)

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

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

Listed on SARA Section 313 (Specific toxic chemical listings)

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

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

| | |
|-------------------------------------|---------------------------------|
| SARA Section 311/312 Hazard Classes | Delayed (chronic) health hazard |
|-------------------------------------|---------------------------------|

15.2. International regulations

CANADA

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%)

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

15.2.1. National regulations

No additional information available

15.3. US State regulations

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%)

| | |
|----------------------------|---|
| 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. |
|----------------------------|---|

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

| |
|---|
| 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. |
| ISOCTANE UNLABELED (540-84-1) |
| 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. |
| 3,3',4,4',5,5'-HEXACB UNLABELED (32774-16-6) |
| U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause cancer. |
| 2,3,3',4,4',5-HEXACB UNLABELED (38380-08-4) |
| U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List |
| 2,2',3,4,4',5,5'-HEPTACB (PCB-180) (13C12, 99%) (35065-29-3 (Unlabeled)) |
| U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm. |
| 2,3',4,4',5-PENTACB UNLABELED (31508-00-6) |
| 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-156) (13C12, 99%) (208263-68-7) |
| U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm. |
| 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 WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm. |
| 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 WARNING! This product contains a chemical known by the state of California to cause birth defects or other reproductive harm. |
| 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 WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm. |
| 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 |

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - New Jersey - Right to Know Hazardous Substance List

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.

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

WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or 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 : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

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

Acute Tox. 4 (Inhalation)

Acute toxicity (inhalation) Category 4

PCB CALIBRATION SOLUTION CS4 (UNLABELED/13C12, 99%) EC-4939-CS4

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

| | |
|-------------------------------------|---|
| Acute Tox. 4 (Inhalation:vapour) | Acute toxicity (inhalation:vapour) 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 |
| Aquatic Chronic 2 | Hazardous to the aquatic environment - Chronic Hazard Category 2 |
| Asp. Tox. 1 | Aspiration hazard Category 1 |
| Eye Dam. 1 | Serious eye damage/eye irritation Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation Category 2 |
| Flam. Liq. 2 | Flammable liquids 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 |
| 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 |
| H410 | Very toxic to aquatic life with long lasting effects |
| H411 | Toxic to aquatic life with long lasting effects |
| R10 | Flammable |
| R11 | Highly flammable |
| R20 | Harmful by inhalation |
| R22 | Harmful if swallowed |
| R33 | Danger of cumulative effects |
| R38 | Irritating to skin |
| R41 | Risk of serious damage to eyes |
| R48/20 | Harmful: danger of serious damage to health by prolonged exposure through inhalation |
| R48/20/21/22 | Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed |
| R48/21/22 | Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed |
| 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 |
| F | Highly flammable |
| N | Dangerous for the environment |
| Xi | Irritant |
| Xn | Harmful |

NFPA health hazard

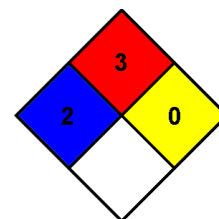
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

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