



# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 18/07/2018

Revision date:

Version: 1.0

EO-5104-4

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

### 1.1. Product identifier

Product form : Mixtures  
Product name : BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)  
Product code : EO-5104-4

### 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

#### 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](mailto:cilsales@isotope.com) [www.isotope.com](http://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:vapour)	H332
Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304
Aquatic Acute 1	H400

Full text of hazard classes and H-statements : see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

N; R50  
Xi; R36/38  
Xn; R65  
Xn; R48/20  
R67  
R10

Full text of R-phrases: see section 16

#### GHS-US classification

Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:vapour)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304

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Aquatic Acute 1

H400

Full text of H statements : see section 16

### Adverse physicochemical, human health and environmental effects

Central Nervous System. Flammable liquid and vapour. May cause drowsiness or dizziness. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May be fatal if swallowed and enters airways.

## 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 vapour  
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  
H373 - May cause damage to organs through prolonged or repeated exposure  
H400 - Very toxic to aquatic life

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  
P260 - Do not breathe dust, fume, gas, mist, spray, vapors.  
P264 - Wash hands, forearms and face 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 vapour  
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  
H373 - May cause damage to organs through prolonged or repeated exposure  
H400 - Very toxic to aquatic life

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.  
P260 - Do not breathe dust, fume, gas, mist, spray, vapors.  
P261 - Avoid breathing fume, mist, spray, vapors.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P280 - Wear eye protection, face protection, protective clothing, protective gloves.  
P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER  
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

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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 doctor, a POISON CENTER if you feel unwell  
P314 - Get medical advice/attention if you feel unwell.  
P321 - Specific treatment (see Hazardous component(s) for labeling 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+P364 - Take off contaminated clothing and wash it before reuse.  
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO<sub>2</sub>), dry extinguishing powder 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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 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	99.999599582 2	R10 Xn; R20 Xn; R65 Xi; R36/38 R67
2,2',3,4,4',5',6-HEPTABDE (BDE-183) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 207122-16-5 (Unlabeled)	0.0000348189	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',5,5'-HEXABDE (BDE-153) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 68631-49-2 (Unlabeled)	0.0000278552	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',5-PENTABDE (BDE-99) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 60348-60-9 (Unlabeled)	0.0000208914	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',6-PENTABDE (BDE-100) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 189084-64-8 (Unlabeled)	0.0000208914	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3',4,4',5-PENTABDE (BDE-118) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 446254-80-4 (Unlabeled) (EC-No.) 215-648-1	0.0000208914	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
3,3',4,4',5-PENTABDE (BDE-126) (13C12, 99%)	(CAS-No.) 1401355-56-3	0.0000208914	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
4-MONOBDE (BDE-3) (13C12, 99%)	(CAS-No.) 101-55-3 (Unlabeled)	0.0000139276	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
4,4'-DIBDE (BDE-15) (13C12, 99%)	(CAS-No.) 2050-47-7 (Unlabeled) (EC-No.) 218-090-7 (Unlabeled)	0.0000139276	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4,4'-TRIBDE (BDE-28) (13C12, 99%)	(CAS-No.) 41318-75-6 (Unlabeled)	0.0000139276	Xn; R20/21/22 Carc. Cat. 2; R45 Carc. Cat. 2; R49
2,2',4,4'-TETRABDE (BDE-47) (13C12, 99%)	(CAS-No.) 5436-43-1 (Unlabeled)	0.0000139276	Xn; R20/21/22
3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%)	(CAS-No.) 93703-48-1 (Unlabeled)	0.0000139276	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED	(CAS-No.) 182677-30-1	0.0000104457	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED	(CAS-No.) 189084-67-1	0.0000087047	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED	(CAS-No.) 207122-16-5	0.0000087047	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED	(CAS-No.) 189084-68-2	0.0000087047	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED	(CAS-No.) 68631-49-2	0.0000069638	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED	(CAS-No.) 207122-15-4	0.0000069638	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED	(CAS-No.) 35854-94-5	0.0000069638	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3,4,4',5,6'-HEXABDE (BDE-166) UNLABELED	(CAS-No.) 189084-58-0	0.0000069638	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED	(CAS-No.) 182346-21-0	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED	(CAS-No.) 60348-60-9	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED	(CAS-No.) 189084-64-8	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3,4,5,6-PENTABDE (BDE-116) UNLABELED	(CAS-No.) 189084-65-9	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3',4,4',5-PENTABDE (BDE-118) UNLABELED	(CAS-No.) 446254-80-4 (EC-No.) 215-648-1	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED	(CAS-No.) 189084-66-0	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED	(CAS-No.) 366791-32-4	0.0000052228	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2-MONOBDE (BDE-1) UNLABELED	(CAS-No.) 7025-06-1	0.0000034819	Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3-MONOBDE (BDE-2) UNLABELED	(CAS-No.) 6876-00-2	0.0000034819	Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
4-MONOBDE (BDE-3) UNLABELED	(CAS-No.) 101-55-3	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4'-DIBDE (BDE-8) UNLABELED	(CAS-No.) 147217-71-8	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,6-DIBDE (BDE-10) UNLABELED	(CAS-No.) 51930-04-2	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3,3'-DIBDE (BDE-11) UNLABELED	(CAS-No.) 6903-63-5	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3,4-DIBDE (BDE-12) UNLABELED	(CAS-No.) 189084-59-1	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3,4'-DIBDE (BDE-13) UNLABELED	(CAS-No.) 83694-71-7	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
4,4'-DIBDE (BDE-15) UNLABELED	(CAS-No.) 2050-47-7 (EC-No.) 218-090-7	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
2,2',4-TRIBDE (BDE-17) UNLABELED	(CAS-No.) 147217-75-2	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3',4-TRIBDE (BDE-25) UNLABELED	(CAS-No.) 147217-77-4	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4,4'-TRIBDE (BDE-28) UNLABELED	(CAS-No.) 41318-75-6	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4,6-TRIBDE (BDE-30) UNLABELED	(CAS-No.) 155999-95-4	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4',6-TRIBDE (BDE-32) UNLABELED	(CAS-No.) 189084-60-4	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2',3,4-TRIBDE (BDE-33) UNLABELED	(CAS-No.) 147217-78-5	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3,3',4-TRIBDE (BDE-35) UNLABELED	(CAS-No.) 147217-80-9	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3,4,4'-TRIBDE (BDE-37) UNLABELED	(CAS-No.) 147217-81-0	0.0000034819	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',4,4'-TETRABDE (BDE-47) UNLABELED	(CAS-No.) 5436-43-1 (EC-No.) 208-759-1 (EC Index-No.) 601-009-00-8	0.0000034819	Xn; R22 Xi; R41 Carc.Cat.1; R45 Carc.Cat.1; R49 Xi; R37 Xi; R38 N; R51/53

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
2,2',4,5'-TETRABDE (BDE-49) UNLABELED	(CAS-No.) 243982-82-3	0.0000034819	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3',4,4'-TETRABDE (BDE-66) UNLABELED	(CAS-No.) 189084-61-5	0.0000034819	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,3',4',6-TETRABDE (BDE-71) UNLABELED	(CAS-No.) 189084-62-6	0.0000034819	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4,4',6-TETRABDE (BDE-75) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 189084-63-7 (Unlabeled)	0.0000034819	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
3,3',4,4'-TETRABDE (BDE-77) UNLABELED	(CAS-No.) 93703-48-1	0.0000034819	Carc. Cat. 1; R45 Carc. Cat. 1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,4-DIBDE (BDE-7) UNLABELED	(CAS-No.) 171977-44-9	0.0000034819	Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53

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	99.999599582 2	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
2,2',3,4,4',5',6-HEPTABDE (BDE-183) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 207122-16-5 (Unlabeled)	0.0000348189	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4',5,5'-HEXABDE (BDE-153) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 68631-49-2 (Unlabeled)	0.0000278552	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4',5-PENTABDE (BDE-99) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 60348-60-9 (Unlabeled)	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411



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2,2',4,4',6-PENTABDE (BDE-100) (13C12, 99%)	(CAS-No.) 189084-64-8 (Unlabeled)	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3',4,4',5-PENTABDE (BDE-118) (13C12, 99%)	(CAS-No.) 446254-80-4 (Unlabeled) (EC-No.) 215-648-1	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,3',4,4',5-PENTABDE (BDE-126) (13C12, 99%)	(CAS-No.) 1401355-56-3	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
4-MONOBDE (BDE-3) (13C12, 99%)	(CAS-No.) 101-55-3 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
4,4'-DIBDE (BDE-15) (13C12, 99%)	(CAS-No.) 2050-47-7 (Unlabeled) (EC-No.) 218-090-7 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 STOT SE 3, H335 Aquatic Chronic 2, H411
2,4,4'-TRIBDE (BDE-28) (13C12, 99%)	(CAS-No.) 41318-75-6 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4'-TETRABDE (BDE-47) (13C12, 99%)	(CAS-No.) 5436-43-1 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%)	(CAS-No.) 93703-48-1 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED	(CAS-No.) 182677-30-1	0.0000104457	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED	(CAS-No.) 189084-67-1	0.0000087047	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED	(CAS-No.) 207122-16-5	0.0000087047	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED	(CAS-No.) 189084-68-2	0.0000087047	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sup>12</sup>, 99%) (CS4)

EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED	(CAS-No.) 68631-49-2	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED	(CAS-No.) 207122-15-4	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED	(CAS-No.) 35854-94-5	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED	(CAS-No.) 189084-58-0	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED	(CAS-No.) 182346-21-0	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED	(CAS-No.) 60348-60-9	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED	(CAS-No.) 189084-64-8	0.0000052228	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Carc. 1A, H350 Carc. 1A, H350i STOT SE 3, H335 Aquatic Chronic 2, H411
2,3,4,5,6-PENTABDE (BDE-116) UNLABELED	(CAS-No.) 189084-65-9	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3',4,4',5-PENTABDE (BDE-118) UNLABELED	(CAS-No.) 446254-80-4 (EC-No.) 215-648-1	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED	(CAS-No.) 189084-66-0	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED	(CAS-No.) 366791-32-4	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2-MONOBDE (BDE-1) UNLABELED	(CAS-No.) 7025-06-1	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sup>12</sup>, 99%) (CS4)

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## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
3-MONOBDE (BDE-2) UNLABELED	(CAS-No.) 6876-00-2	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
4-MONOBDE (BDE-3) UNLABELED	(CAS-No.) 101-55-3	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,4'-DIBDE (BDE-8) UNLABELED	(CAS-No.) 147217-71-8	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,6-DIBDE (BDE-10) UNLABELED	(CAS-No.) 51930-04-2	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H335 Aquatic Chronic 2, H411
3,3'-DIBDE (BDE-11) UNLABELED	(CAS-No.) 6903-63-5	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,4-DIBDE (BDE-12) UNLABELED	(CAS-No.) 189084-59-1	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,4'-DIBDE (BDE-13) UNLABELED	(CAS-No.) 83694-71-7	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
4,4'-DIBDE (BDE-15) UNLABELED	(CAS-No.) 2050-47-7 (EC-No.) 218-090-7	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4-TRIBDE (BDE-17) UNLABELED	(CAS-No.) 147217-75-2	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3',4-TRIBDE (BDE-25) UNLABELED	(CAS-No.) 147217-77-4	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,4,4'-TRIBDE (BDE-28) UNLABELED	(CAS-No.) 41318-75-6	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,4,6-TRIBDE (BDE-30) UNLABELED	(CAS-No.) 155999-95-4	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,4',6-TRIBDE (BDE-32) UNLABELED	(CAS-No.) 189084-60-4	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2',3,4-TRIBDE (BDE-33) UNLABELED	(CAS-No.) 147217-78-5	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,3',4-TRIBDE (BDE-35) UNLABELED	(CAS-No.) 147217-80-9	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,4,4'-TRIBDE (BDE-37) UNLABELED	(CAS-No.) 147217-81-0	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,2',4,4'-TETRABDE (BDE-47) UNLABELED	(CAS-No.) 5436-43-1 (EC-No.) 208-759-1 (EC Index-No.) 601-009-00-8	0.0000034819	Flam. Liq. 2, H225 Acute Tox. 1 (Oral), H300 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H335 Aquatic Chronic 2, H411
2,2',4,5'-TETRABDE (BDE-49) UNLABELED	(CAS-No.) 243982-82-3	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3',4,4'-TETRABDE (BDE-66) UNLABELED	(CAS-No.) 189084-61-5	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,3',4',6-TETRABDE (BDE-71) UNLABELED	(CAS-No.) 189084-62-6	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,4,4',6-TETRABDE (BDE-75) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 189084-63-7 (Unlabeled)	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
3,3',4,4'-TETRABDE (BDE-77) UNLABELED	(CAS-No.) 93703-48-1	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
2,4-DIBDE (BDE-7) UNLABELED	(CAS-No.) 171977-44-9	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H336 Aquatic Chronic 2, H411
Name	Product identifier	%	GHS-US classification
N-NONANE UNLABELED	(CAS-No.) 111-84-2	99.999599582 2	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

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS<sub>4</sub>)

EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS-US classification
2,2',3,4,4',5',6-HEPTABDE (BDE-183) (13C <sub>12</sub> , 99%)	(CAS-No.) 207122-16-5 (Unlabeled)	0.0000348189	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',5,5'-HEXABDE (BDE-153) (13C <sub>12</sub> , 99%)	(CAS-No.) 68631-49-2 (Unlabeled)	0.0000278552	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',5-PENTABDE (BDE-99) (13C <sub>12</sub> , 99%)	(CAS-No.) 60348-60-9 (Unlabeled)	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H335 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',6-PENTABDE (BDE-100) (13C <sub>12</sub> , 99%)	(CAS-No.) 189084-64-8 (Unlabeled)	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,3',4,4',5-PENTABDE (BDE-118) (13C <sub>12</sub> , 99%)	(CAS-No.) 446254-80-4 (Unlabeled)	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,3',4,4',5-PENTABDE (BDE-126) (13C <sub>12</sub> , 99%)	(CAS-No.) 1401355-56-3	0.0000208914	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
4-MONOBDE (BDE-3) (13C <sub>12</sub> , 99%)	(CAS-No.) 101-55-3 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H335 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
4,4'-DIBDE (BDE-15) (13C <sub>12</sub> , 99%)	(CAS-No.) 2050-47-7 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4,4'-TRIBDE (BDE-28) (13C <sub>12</sub> , 99%)	(CAS-No.) 41318-75-6 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4'-TETRABDE (BDE-47) (13C <sub>12</sub> , 99%)	(CAS-No.) 5436-43-1 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,3',4,4'-TETRABDE (BDE-77) (13C <sub>12</sub> , 99%)	(CAS-No.) 93703-48-1 (Unlabeled)	0.0000139276	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sup>12</sup>, 99%) (CS4)

EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS-US classification
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED	(CAS-No.) 182677-30-1	0.0000104457	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED	(CAS-No.) 189084-67-1	0.0000087047	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED	(CAS-No.) 207122-16-5	0.0000087047	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED	(CAS-No.) 189084-68-2	0.0000087047	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED	(CAS-No.) 68631-49-2	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED	(CAS-No.) 207122-15-4	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED	(CAS-No.) 35854-94-5	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED	(CAS-No.) 189084-58-0	0.0000069638	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED	(CAS-No.) 182346-21-0	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED	(CAS-No.) 60348-60-9	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED	(CAS-No.) 189084-64-8	0.0000052228	Not classified
2,3,4,5,6-PENTABDE (BDE-116) UNLABELED	(CAS-No.) 189084-65-9	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sup>12</sup>, 99%) (CS4)

EO-5104-4

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS-US classification
2,3',4,4',5-PENTABDE (BDE-118) UNLABELED	(CAS-No.) 446254-80-4	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED	(CAS-No.) 189084-66-0	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED	(CAS-No.) 366791-32-4	0.0000052228	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2-MONOBDE (BDE-1) UNLABELED	(CAS-No.) 7025-06-1	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3-MONOBDE (BDE-2) UNLABELED	(CAS-No.) 6876-00-2	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
4-MONOBDE (BDE-3) UNLABELED	(CAS-No.) 101-55-3	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4'-DIBDE (BDE-8) UNLABELED	(CAS-No.) 147217-71-8	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,6-DIBDE (BDE-10) UNLABELED	(CAS-No.) 51930-04-2	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,3'-DIBDE (BDE-11) UNLABELED	(CAS-No.) 6903-63-5	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,4-DIBDE (BDE-12) UNLABELED	(CAS-No.) 189084-59-1	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,4'-DIBDE (BDE-13) UNLABELED	(CAS-No.) 83694-71-7	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

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Name	Product identifier	%	GHS-US classification
4,4'-DIBDE (BDE-15) UNLABELED	(CAS-No.) 2050-47-7	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4-TRIBDE (BDE-17) UNLABELED	(CAS-No.) 147217-75-2	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,3',4-TRIBDE (BDE-25) UNLABELED	(CAS-No.) 147217-77-4	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4,4'-TRIBDE (BDE-28) UNLABELED	(CAS-No.) 41318-75-6	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4,6-TRIBDE (BDE-30) UNLABELED	(CAS-No.) 155999-95-4	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4',6-TRIBDE (BDE-32) UNLABELED	(CAS-No.) 189084-60-4	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2',3,4-TRIBDE (BDE-33) UNLABELED	(CAS-No.) 147217-78-5	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,3',4-TRIBDE (BDE-35) UNLABELED	(CAS-No.) 147217-80-9	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,4,4'-TRIBDE (BDE-37) UNLABELED	(CAS-No.) 147217-81-0	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,4'-TETRABDE (BDE-47) UNLABELED	(CAS-No.) 5436-43-1	0.0000034819	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H335 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,2',4,5'-TETRABDE (BDE-49) UNLABELED	(CAS-No.) 243982-82-3	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411



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Name	Product identifier	%	GHS-US classification
2,3',4,4'-TETRABDE (BDE-66) UNLABELED	(CAS-No.) 189084-61-5	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,3',4',6-TETRABDE (BDE-71) UNLABELED	(CAS-No.) 189084-62-6	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4,4',6-TETRABDE (BDE-75) ( <sup>13</sup> C <sub>12</sub> , 99%)	(CAS-No.) 189084-63-7 (Unlabeled)	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
3,3',4,4'-TETRABDE (BDE-77) UNLABELED	(CAS-No.) 93703-48-1	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
2,4-DIBDE (BDE-7) UNLABELED	(CAS-No.) 171977-44-9	0.0000034819	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H336 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of R- and H- phrases: 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, both acute and delayed

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. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

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

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour.  
Reactivity : Flammable liquid and vapour. vapors may form flammable mixture with air.

### 5.3. Advice for firefighters

Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.

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Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Wear personal protective equipment. Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing fume, gas, mist, spray, vapors. Avoid contact with skin and eyes.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment : Dike and contain spill. Dispose as hazardous waste. Comply with local regulations for disposal.  
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.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/ <sup>13</sup> C <sub>12</sub> , 99%) (CS4)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.00000000 ppm USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	CNS impair
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1050 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm USA. NIOSH Recommended Exposure Limits
USA NIOSH	Remark (NIOSH)	Central Nervous System impairment
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1050 mg/m <sup>3</sup> USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	1050 California permissible exposure limits for chemical contaminants.

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

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BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/ <sup>13</sup> C <sub>12</sub> , 99%) (CS4)		
USA OSHA	OSHA PEL (Ceiling) (ppm)	200 ppm California permissible exposure limits for chemical contaminants.
N-NONANE UNLABELED (111-84-2)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.00000000 ppm USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	CNS impair
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1050 mg/m <sup>3</sup> USA. NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm USA. NIOSH Recommended Exposure Limits
USA NIOSH	Remark (NIOSH)	Central Nervous System impairment
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1050 mg/m <sup>3</sup> USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	1050 California permissible exposure limits for chemical contaminants.
USA OSHA	OSHA PEL (Ceiling) (ppm)	200 ppm California permissible exposure limits for chemical contaminants.

### 8.2. Exposure controls

- Appropriate engineering controls : Ensure good ventilation of the work station.  
Personal protective equipment : Protective clothing. Protective goggles. Gloves. Self-contained breathing apparatus.



- Materials for protective clothing : Wear suitable protective clothing and gloves.  
Hand protection : protective gloves.  
Eye protection : Chemical goggles or face shield. Chemical goggles or safety glasses.  
Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.  
Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Approved respirator.  
Environmental exposure controls : Avoid release to the environment.

## 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  
Color : Colorless.  
Odor : No data available  
Odor threshold : No data available  
pH : No data available  
Relative evaporation rate (butyl acetate=1) : No data available  
Melting point : Not applicable  
Freezing point : -53 °C (- 63 °F) - lit  
Boiling point : 151 °C (304 °F) - lit  
Flash point : 31 °C (87.8 °F) - closed cup  
Auto-ignition temperature : 205 °C (401 °F)  
Decomposition temperature : No data available  
Flammability (solid, gas) : Not applicable  
Vapor pressure : 5.69 hPa (4.27 mmHg) at 25 °C (77 °F)  
Relative vapor density at 20 °C : No data available

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

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Relative density	: No data available
Specific gravity / density	: 0.718 g/ml at 25 °C (77 °F)
Solubility	: Water: 0.0002 % at 25 °C (77 °F) - slightly soluble
Log Pow	: 5.65
Log Kow	: No data available
Viscosity, kinematic	: <= 1.008 mm <sup>2</sup> /s at 20 °C (68 °F)
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 0.87 - 2.9 % (V)

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour. 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>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Inhalation:vapour: Harmful if inhaled.

BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/ <sup>13</sup> C <sub>12</sub> , 99%) (CS4)	
LC50 inhalation rat (mg/l)	23760 mg/m <sup>3</sup> male - 4 h
ATE CLP (vapors)	11.000 mg/l/4h
ATE CLP (dust, mist)	23.760 mg/l/4h
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative

N-NONANE UNLABELED (111-84-2)	
LC50 inhalation rat (mg/l)	23760 mg/m <sup>3</sup> male - 4 h
ATE CLP (vapors)	11.000 mg/l/4h
ATE CLP (dust, mist)	23.760 mg/l/4h
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative

2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)	
ATE CLP (oral)	0.500 mg/kg body weight

2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8)	
ATE CLP (oral)	500.000 mg/kg body weight

2,2',4,4',5-PENTABDE (BDE-99) ( <sup>13</sup> C <sub>12</sub> , 99%) (60348-60-9 (Unlabeled))	
Additional information	LD50 Intraperitoneal-mouse-125mg/kg

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
Reproductive toxicity	: Not classified

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

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Specific target organ toxicity – single exposure : May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure : May cause damage to organs through prolonged or repeated exposure.

<b>BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)</b>	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight/day female (OECD Test Guideline 408)
<b>N-NONANE UNLABELED (111-84-2)</b>	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight/day female (OECD Test Guideline 408)
Aspiration hazard	: May be fatal if swallowed and enters airways.
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 after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May be harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.

## SECTION 12: Ecological information

### 12.1. Toxicity

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

<b>BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)</b>	
EC50 Daphnia 1	0.2 mg/l static test EC50 - Daphnia magna (Water flea) - 48 h
<b>N-NONANE UNLABELED (111-84-2)</b>	
EC50 Daphnia 1	0.2 mg/l static test EC50 - Daphnia magna (Water flea) - 48 h
<b>4-MONOBBDE (BDE-3) UNLABELED (101-55-3)</b>	
LC50 fish 1	50.9 mg/l Lepomis macrochirus (Bluegill) - 24 h
LC50 fish 2	9.6 ppm Lepomis macrochirus (Bluegill) - 48 h
<b>4-MONOBBDE (BDE-3) (<sup>13</sup>C<sub>12</sub>, 99%) (101-55-3) (Unlabeled)</b>	
LC50 fish 1	50.9 mg/l Lepomis macrochirus (Bluegill) - 24 h
LC50 fish 2	9.6 mg/l Lepomis macrochirus (Bluegill) - 48 h

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

<b>BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)</b>	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.
<b>N-NONANE UNLABELED (111-84-2)</b>	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.
<b>2-MONOBBDE (BDE-1) UNLABELED (7025-06-1)</b>	
Log Pow	4.24
Bioaccumulative potential	Not available.
<b>3-MONOBBDE (BDE-2) UNLABELED (6876-00-2)</b>	
Log Pow	4.343
Bioaccumulative potential	Not available.
<b>4-MONOBBDE (BDE-3) UNLABELED (101-55-3)</b>	
Bioaccumulative potential	Not available.
<b>2,4'-DIBDE (BDE-8) UNLABELED (147217-71-8)</b>	
Bioaccumulative potential	Not available.
<b>2,6-DIBDE (BDE-10) UNLABELED (51930-04-2)</b>	
Bioaccumulative potential	Not available.
<b>3,3'-DIBDE (BDE-11) UNLABELED (6903-63-5)</b>	
Bioaccumulative potential	Not available.

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS<sub>4</sub>)

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<b>3,4-DIBDE (BDE-12) UNLABELED (189084-59-1)</b>	
Bioaccumulative potential	Not available.
<b>3,4'-DIBDE (BDE-13) UNLABELED (83694-71-7)</b>	
Bioaccumulative potential	Not available.
<b>4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)</b>	
Bioaccumulative potential	Not available.
<b>2,3',4-TRIBDE (BDE-25) UNLABELED (147217-77-4)</b>	
Bioaccumulative potential	Not available.
<b>2,4,6-TRIBDE (BDE-30) UNLABELED (155999-95-4)</b>	
Bioaccumulative potential	Not available.
<b>2,4',6-TRIBDE (BDE-32) UNLABELED (189084-60-4)</b>	
Bioaccumulative potential	Not available.
<b>2',3,4-TRIBDE (BDE-33) UNLABELED (147217-78-5)</b>	
Bioaccumulative potential	Not available.
<b>3,3',4-TRIBDE (BDE-35) UNLABELED (147217-80-9)</b>	
Bioaccumulative potential	Not available.
<b>3,4,4'-TRIBDE (BDE-37) UNLABELED (147217-81-0)</b>	
Bioaccumulative potential	Not available.
<b>2,2',4,5'-TETRABDE (BDE-49) UNLABELED (243982-82-3)</b>	
Bioaccumulative potential	Not available.
<b>2,3',4',6-TETRABDE (BDE-71) UNLABELED (189084-62-6)</b>	
Bioaccumulative potential	Not available.
<b>2,4,4',6-TETRABDE (BDE-75) (<sup>13</sup>C<sub>12</sub>, 99%) (189084-63-7 (Unlabeled))</b>	
Bioaccumulative potential	Not available.
<b>3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)</b>	
Bioaccumulative potential	Not available.
<b>2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)</b>	
Bioaccumulative potential	Not available.
<b>2,3,4,5,6-PENTABDE (BDE-116) UNLABELED (189084-65-9)</b>	
Bioaccumulative potential	Not available.
<b>2,3',4,4',5-PENTABDE (BDE-118) UNLABELED (446254-80-4)</b>	
Bioaccumulative potential	Not available.
<b>2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)</b>	
Bioaccumulative potential	Not available.
<b>3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)</b>	
Bioaccumulative potential	Not available.
<b>2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)</b>	
Bioaccumulative potential	Not available.
<b>2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)</b>	
Bioaccumulative potential	Not available.
<b>2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED (189084-58-0)</b>	
Bioaccumulative potential	Not available.
<b>2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED (189084-67-1)</b>	
Bioaccumulative potential	Not available.
<b>2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)</b>	
Bioaccumulative potential	Not available.
<b>2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)</b>	
Bioaccumulative potential	Not available.
<b>4-MONOBDE (BDE-3) (<sup>13</sup>C<sub>12</sub>, 99%) (101-55-3 (Unlabeled))</b>	
Bioaccumulative potential	Not available.
<b>4,4'-DIBDE (BDE-15) (<sup>13</sup>C<sub>12</sub>, 99%) (2050-47-7 (Unlabeled))</b>	
Bioaccumulative potential	Not available.

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4) EO-5104-4

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<b>3,3',4,4'-TETRABDE (BDE-77) (<sup>13</sup>C<sub>12</sub>, 99%) (93703-48-1 (Unlabeled))</b>	
Bioaccumulative potential	Not available.
<b>2,3',4,4',5-PENTABDE (BDE-118) (<sup>13</sup>C<sub>12</sub>, 99%) (446254-80-4 (Unlabeled))</b>	
Bioaccumulative potential	Not available.
<b>3,3',4,4',5-PENTABDE (BDE-126) (<sup>13</sup>C<sub>12</sub>, 99%) (1401355-56-3)</b>	
Bioaccumulative potential	Not available.

### 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 : Disposal must be done according to official regulations. Very toxic to aquatic life with long lasting effects.

## 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.

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 ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

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

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nonanes  
Class (DOT) : 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



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### 14.3. Additional information

Emergency Response Guide (ERG) Number : 128

Other information : No supplementary information available.

#### Overland transport

Packing group (ADR) : III

Class (ADR) : 3 - Flammable liquid

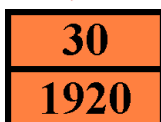
Hazard identification number (Kemler No.) : 30

Classification code (ADR) : F1

Hazard labels (ADR) : 3 - Flammable liquids



Orange plates :



Tunnel restriction code (ADR) : 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)

Civil Aeronautics Law : Flammable liquids

### 14.4. Environmental hazards

Dangerous for the environment :



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

BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/ <sup>13</sup> C <sub>12</sub> , 99%) (CS4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
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
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.



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<b>N-NONANE UNLABELED (111-84-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
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
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>2-MONOBDE (BDE-1) UNLABELED (7025-06-1)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>3-MONOBDE (BDE-2) UNLABELED (6876-00-2)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>4-MONOBDE (BDE-3) UNLABELED (101-55-3)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)</b>	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard
<b>3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,2',4,4',6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED (189084-58-0)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED (207122-16-5)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>4-MONOBDE (BDE-3) (<sup>13</sup>C<sub>12</sub>, 99%) (101-55-3 (Unlabeled))</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,4,4'-TRIBDE (BDE-28) (<sup>13</sup>C<sub>12</sub>, 99%) (41318-75-6 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>2,2',4,4',6-PENTABDE (BDE-100) (<sup>13</sup>C<sub>12</sub>, 99%) (189084-64-8 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
<b>2,3',4,4',5-PENTABDE (BDE-118) (<sup>13</sup>C<sub>12</sub>, 99%) (446254-80-4 (Unlabeled))</b>	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
<b>3,3',4,4',5-PENTABDE (BDE-126) (<sup>13</sup>C<sub>12</sub>, 99%) (1401355-56-3)</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
<b>2,2',3,4,4',5',6-HEPTABDE (BDE-183) (<sup>13</sup>C<sub>12</sub>, 99%) (207122-16-5 (Unlabeled))</b>	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

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### 15.2. International regulations

#### CANADA

##### BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

Listed on the Canadian DSL (Domestic Substances List)

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

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

### 15.3. US State regulations

#### BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)(I)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations 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 U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

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

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)
No	No	No	No	

#### 2-MONOBDE (BDE-1) UNLABELED (7025-06-1)

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)
No	No	No	No	

#### 3-MONOBDE (BDE-2) UNLABELED (6876-00-2)

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)
No	No	No	No	

#### 4-MONOBDE (BDE-3) UNLABELED (101-55-3)

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)
No	No	No	No	

#### 2,4'-DIBDE (BDE-8) UNLABELED (147217-71-8)

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)
No	No	No	No	

#### 2,6-DIBDE (BDE-10) UNLABELED (51930-04-2)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity -	U.S. - California - Proposition 65 - Reproductive Toxicity -	No significant risk level (NSRL)
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# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4) EO-5104-4

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<b>2,6-DIBDE (BDE-10) UNLABELED (51930-04-2)</b>				
		Female	Male	
No	No	No	No	
<b>3,3'-DIBDE (BDE-11) UNLABELED (6903-63-5)</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)
No	No	No	No	
<b>3,4-DIBDE (BDE-12) UNLABELED (189084-59-1)</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)
No	No	No	No	
<b>3,4'-DIBDE (BDE-13) UNLABELED (83694-71-7)</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)
No	No	No	No	
<b>4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)</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)
No	No	No	No	
<b>2,2',4-TRIBDE (BDE-17) UNLABELED (147217-75-2)</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)
No	No	No	No	
<b>2,3',4-TRIBDE (BDE-25) UNLABELED (147217-77-4)</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)
No	No	No	No	
<b>2,4,4'-TRIBDE (BDE-28) UNLABELED (41318-75-6)</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)
No	No	No	No	
<b>2,4,6-TRIBDE (BDE-30) UNLABELED (155999-95-4)</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)
No	No	No	No	
<b>2,4',6-TRIBDE (BDE-32) UNLABELED (189084-60-4)</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)

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<b>2,4,6-TRIBDE (BDE-32) UNLABELED (189084-60-4)</b>				
No	No	No	No	
<b>2',3,4-TRIBDE (BDE-33) UNLABELED (147217-78-5)</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)
No	No	No	No	
<b>3,3',4-TRIBDE (BDE-35) UNLABELED (147217-80-9)</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)
No	No	No	No	
<b>3,4,4'-TRIBDE (BDE-37) UNLABELED (147217-81-0)</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)
No	No	No	No	
<b>2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)</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)
No	No	No	No	
<b>2,2',4,5'-TETRABDE (BDE-49) UNLABELED (243982-82-3)</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)
No	No	No	No	
<b>2,3',4,4'-TETRABDE (BDE-66) UNLABELED (189084-61-5)</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)
No	No	No	No	
<b>2,3',4',6-TETRABDE (BDE-71) UNLABELED (189084-62-6)</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)
No	No	No	No	
<b>2,4,4',6-TETRABDE (BDE-75) (<sup>13</sup>C<sub>12</sub>, 99%) (189084-63-7 (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)
No	No	No	No	
<b>3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)</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)
No	No	No	No	

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<b>2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)</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)
No	No	No	No	
<b>2,2',4,4',5-PENTABDE (BDE-99) UNLABELED (60348-60-9)</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)
No	No	No	No	
<b>2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8)</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)
No	No	No	No	
<b>2,3,4,5,6-PENTABDE (BDE-116) UNLABELED (189084-65-9)</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)
No	No	No	No	
<b>2,3',4,4',5-PENTABDE (BDE-118) UNLABELED (446254-80-4)</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)
No	No	No	No	
<b>2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)</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)
No	No	No	No	
<b>3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)</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)
No	No	No	No	
<b>2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)</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)
No	No	No	No	
<b>2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED (68631-49-2)</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)
No	No	No	No	
<b>2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)</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)
No	No	No	No	

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

EO-5104-4

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)</b>				
		Female	Male	
No	No	No	No	
<b>2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)</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)
No	No	No	No	
<b>2,3,4,4',5,6'-HEXABDE (BDE-166) UNLABELED (189084-58-0)</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)
No	No	No	No	
<b>2,2',3,4,4',5,6'-HEPTABDE (BDE-181) UNLABELED (189084-67-1)</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)
No	No	No	No	
<b>2,2',3,4,4',5',6'-HEPTABDE (BDE-183) UNLABELED (207122-16-5)</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)
No	No	No	No	
<b>2,3,3',4,4',5,6'-HEPTABDE (BDE-190) UNLABELED (189084-68-2)</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)
No	No	No	No	
<b>2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)</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)
No	No	No	No	
<b>4-MONOBDE (BDE-3) (<sup>13</sup>C<sub>12</sub>, 99%) (101-55-3 (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)
No	No	No	No	
<b>4,4'-DIBDE (BDE-15) (<sup>13</sup>C<sub>12</sub>, 99%) (2050-47-7 (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)
No	No	No	No	
<b>2,4,4'-TRIBDE (BDE-28) (<sup>13</sup>C<sub>12</sub>, 99%) (41318-75-6 (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)

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4) EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>2,4,4'-TRIBDE (BDE-28) (<sup>13</sup>C<sub>12</sub>, 99%) (41318-75-6 (Unlabeled))</b>				
Yes	Yes	Yes	Yes	
<b>2,2',4,4'-TETRABDE (BDE-47) (<sup>13</sup>C<sub>12</sub>, 99%) (5436-43-1 (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)
No	No	No	No	
<b>3,3',4,4'-TETRABDE (BDE-77) (<sup>13</sup>C<sub>12</sub>, 99%) (93703-48-1 (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)
No	No	No	No	
<b>2,2',4,4',5-PENTABDE (BDE-99) (<sup>13</sup>C<sub>12</sub>, 99%) (60348-60-9 (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)
No	No	No	No	
<b>2,2',4,4',6-PENTABDE (BDE-100) (<sup>13</sup>C<sub>12</sub>, 99%) (189084-64-8 (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)
No	No	No	No	
<b>2,3',4,4',5-PENTABDE (BDE-118) (<sup>13</sup>C<sub>12</sub>, 99%) (446254-80-4 (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)
Yes	Yes	Yes	Yes	
<b>3,3',4,4',5-PENTABDE (BDE-126) (<sup>13</sup>C<sub>12</sub>, 99%) (1401355-56-3)</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)
No	No	No	No	
<b>2,2',4,4',5,5'-HEXABDE (BDE-153) (<sup>13</sup>C<sub>12</sub>, 99%) (68631-49-2 (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)
No	No	No	No	
<b>2,2',3,4,4',5,6-HEPTABDE (BDE-183) (<sup>13</sup>C<sub>12</sub>, 99%) (207122-16-5 (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)
No	No	No	No	
<b>N-NONANE UNLABELED (111-84-2)</b>				
<b>State or local regulations</b>				
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations 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 U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances				

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sup>12</sup>, 99%) (CS4)

EO-5104-4

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>2-MONOBDE (BDE-1) UNLABELED (7025-06-1)</b>
<b>State or local regulations</b>
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 WARNING! This product contains a chemical known by the state of California to cause cancer, birth defects or other reproductive harm.
<b>3-MONOBDE (BDE-2) UNLABELED (6876-00-2)</b>
<b>State or local regulations</b>
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List
<b>4-MONOBDE (BDE-3) UNLABELED (101-55-3)</b>
<b>State or local regulations</b>
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.
<b>2,4'-DIBDE (BDE-8) UNLABELED (147217-71-8)</b>
<b>State or local regulations</b>
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.
<b>2,6-DIBDE (BDE-10) UNLABELED (51930-04-2)</b>
<b>State or local regulations</b>
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.
<b>3,3'-DIBDE (BDE-11) UNLABELED (6903-63-5)</b>
<b>State or local regulations</b>
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.
<b>3,4-DIBDE (BDE-12) UNLABELED (189084-59-1)</b>
<b>State or local regulations</b>
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.
<b>3,4'-DIBDE (BDE-13) UNLABELED (83694-71-7)</b>
<b>State or local regulations</b>
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.
<b>4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)</b>
<b>State or local regulations</b>
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.
<b>2,2',4-TRIBDE (BDE-17) UNLABELED (147217-75-2)</b>
<b>State or local regulations</b>
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



# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4) EO-5104-4

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### 2,2',4-TRIBDE (BDE-17) UNLABELED (147217-75-2)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### 2,3',4-TRIBDE (BDE-25) UNLABELED (147217-77-4)

#### 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.

### 2,4,4'-TRIBDE (BDE-28) UNLABELED (41318-75-6)

#### 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.

### 2,4,6-TRIBDE (BDE-30) UNLABELED (155999-95-4)

#### 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.

### 2,4',6-TRIBDE (BDE-32) UNLABELED (189084-60-4)

#### 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.

### 2',3,4-TRIBDE (BDE-33) UNLABELED (147217-78-5)

#### 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.

### 3,3',4-TRIBDE (BDE-35) UNLABELED (147217-80-9)

#### 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.

### 3,4,4'-TRIBDE (BDE-37) UNLABELED (147217-81-0)

#### 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.

### 2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)

#### 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.

### 2,2',4,5'-TETRABDE (BDE-49) UNLABELED (243982-82-3)

#### 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.

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sup>12</sup>, 99%) (CS4)

EO-5104-4

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>2,3',4,4'-TETRABDE (BDE-66) UNLABELED (189084-61-5)</b>
<b>State or local regulations</b>
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.
<b>2,3',4',6-TETRABDE (BDE-71) UNLABELED (189084-62-6)</b>
<b>State or local regulations</b>
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.
<b>2,4,4',6-TETRABDE (BDE-75) (<sup>13</sup>C<sup>12</sup>, 99%) (189084-63-7 (Unlabeled))</b>
<b>State or local regulations</b>
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.
<b>3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)</b>
<b>State or local regulations</b>
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.
<b>2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)</b>
<b>State or local regulations</b>
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.
<b>2,2',4,4',5-PENTABDE (BDE-99) UNLABELED (60348-60-9)</b>
<b>State or local regulations</b>
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.
<b>2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8)</b>
<b>State or local regulations</b>
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.
<b>2,3,4,5,6-PENTABDE (BDE-116) UNLABELED (189084-65-9)</b>
<b>State or local regulations</b>
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.
<b>2,3',4,4',5-PENTABDE (BDE-118) UNLABELED (446254-80-4)</b>
<b>State or local regulations</b>
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.
<b>2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)</b>
<b>State or local regulations</b>
U.S. - Massachusetts - Right To Know List

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

EO-5104-4

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<b>2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)</b>
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.
<b>3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)</b>
<b>State or local regulations</b>
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.
<b>2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)</b>
<b>State or local regulations</b>
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.
<b>2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED (68631-49-2)</b>
<b>State or local regulations</b>
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.
<b>2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)</b>
<b>State or local regulations</b>
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.
<b>2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)</b>
<b>State or local regulations</b>
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.
<b>2,3,4,4',5,6'-HEXABDE (BDE-166) UNLABELED (189084-58-0)</b>
<b>State or local regulations</b>
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.
<b>2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED (189084-67-1)</b>
<b>State or local regulations</b>
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.
<b>2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED (207122-16-5)</b>
<b>State or local regulations</b>
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.
<b>2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)</b>
<b>State or local regulations</b>
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

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### 2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)

#### 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.

### 4-MONOBDE (BDE-3) (<sup>13</sup>C<sub>12</sub>, 99%) (101-55-3 (Unlabeled))

#### 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.

### 4,4'-DIBDE (BDE-15) (<sup>13</sup>C<sub>12</sub>, 99%) (2050-47-7 (Unlabeled))

#### 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.

### 2,4,4'-TRIBDE (BDE-28) (<sup>13</sup>C<sub>12</sub>, 99%) (41318-75-6 (Unlabeled))

#### State or local regulations

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

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

### 2,2',4,4'-TETRABDE (BDE-47) (<sup>13</sup>C<sub>12</sub>, 99%) (5436-43-1 (Unlabeled))

#### 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.

### 3,3',4,4'-TETRABDE (BDE-77) (<sup>13</sup>C<sub>12</sub>, 99%) (93703-48-1 (Unlabeled))

#### 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.

### 2,2',4,4',5-PENTABDE (BDE-99) (<sup>13</sup>C<sub>12</sub>, 99%) (60348-60-9 (Unlabeled))

#### 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.

### 2,2',4,4',6-PENTABDE (BDE-100) (<sup>13</sup>C<sub>12</sub>, 99%) (189084-64-8 (Unlabeled))

#### 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

### 2,3',4,4',5-PENTABDE (BDE-118) (<sup>13</sup>C<sub>12</sub>, 99%) (446254-80-4 (Unlabeled))

#### State or local regulations

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

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

### 3,3',4,4',5-PENTABDE (BDE-126) (<sup>13</sup>C<sub>12</sub>, 99%) (1401355-56-3)

#### 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

# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4)

EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 3,3',4,4',5-PENTABDE (BDE-126) (<sup>13</sup>C<sub>12</sub>, 99%) (1401355-56-3)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### 2,2',4,4',5,5'-HEXABDE (BDE-153) (<sup>13</sup>C<sub>12</sub>, 99%) (68631-49-2 (Unlabeled))

#### 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.

### 2,2',3,4,4',5,6-HEPTABDE (BDE-183) (<sup>13</sup>C<sub>12</sub>, 99%) (207122-16-5 (Unlabeled))

#### 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.

## SECTION 16: Other information

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. 1 (Oral)	Acute toxicity (oral) Category 1
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) 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
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1A	Carcinogenicity Category 1A
Carc. 1A	Carcinogenicity (inhalation) Category 1A
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
Skin Sens. 1	Skin sensitization, Category 1
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H300	Fatal if swallowed
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H350	May cause cancer
H350i	May cause cancer by inhalation.
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
R20	Harmful by inhalation

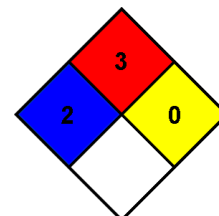
# BROMINATED DIPHENYL ETHER CALIBRATION SOLUTION (UNLABELED/<sup>13</sup>C<sub>12</sub>, 99%) (CS4) EO-5104-4

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R22	Harmful if swallowed
R36/38	Irritating to eyes and skin
R37	Irritating to respiratory system
R38	Irritating to skin
R41	Risk of serious damage to eyes
R45	May cause cancer
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R49	May cause cancer by inhalation
R50	Very toxic to aquatic organisms
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 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
- NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
- NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



### Hazard 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*