



ROHS PBDE NATIVE PAR SPIKE UNLABELED IN NONANE

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 12/15/2015 Revision date: 10/2/2023 Supersedes: 12/15/2015 Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : ROHS PBDE NATIVE PAR SPIKE UNLABELED IN NONANE
Product code : EO-5405

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 3	H226	Flammable liquid and vapor
Acute toxicity (inhalation) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger
Hazard statements (GHS US) : H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness

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Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors.
P264 - Wash Both hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, face protection, protective clothing, protective gloves.
P301+P310 - If swallowed: Immediately call a poison center or doctor.
P302+P352 - If on skin: Wash with plenty of water.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a poison center or doctor if you feel unwell.
P321 - Specific treatment (see Hazard pictograms (CLP) on this label).
P331 - Do NOT induce vomiting.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
N-NONANE UNLABELED	CAS-No.: 111-84-2	99.993	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304

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Name	Product identifier	%	GHS US classification
DECABDE (BDE-209) UNLABELED	CAS-No.: 1163-19-5	0.0007	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:gas), H332
2,2',3,3',4,4',5,6,6'-NONABDE (BDE-207) UNLABELED	CAS-No.: 437701-79-6	0.0007	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',3,3',4,4',5,5',6-NONABDE (BDE-206) UNLABELED	CAS-No.: 63387-28-0	0.0007	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	0.00028	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',4,4',6,6'-HEXABDE (BDE-155) UNLABELED	CAS-No.: 35854-94-5	0.00028	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	0.00028	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	0.00028	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	0.00028	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',5,6-HEXABDE (BDE-166) UNLABELED	CAS-No.: 189084-58-0	0.00028	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'-HEXABDE (BDE-138) UNLABELED	CAS-No.: 182677-30-1	0.00028	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',5,5',6-OCTABDE (BDE-203) UNLABELED	CAS-No.: 337513-72-1	0.00028	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	0.00028	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',5,5',6-OCTABDE (BDE-205) UNLABELED	CAS-No.: 446255-56-7	0.00028	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) UNLABELED	CAS-No.: 101-55-3	0.00014	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	0.00014	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 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	0.00014	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	0.00014	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	0.00014	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	0.00014	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'-TETRABDE (BDE-66) UNLABELED	CAS-No.: 189084-61-5	0.00014	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',4,5'-TETRABDE (BDE-49) UNLABELED	CAS-No.: 243982-82-3	0.00014	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	0.00014	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

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Name	Product identifier	%	GHS US classification
3,3',4,4'-TETRABDE (BDE-77) UNLABELED	CAS-No.: 93703-48-1	0.00014	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-119) UNLABELED	CAS-No.: 189084-66-0	0.00014	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	0.00014	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	0.00014	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	0.00014	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 (Unlabeled)	0.00014	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H335 Aquatic Chronic 2, H411

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general

: Call a physician immediately.

First-aid measures after inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

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First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: Harmful if inhaled.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard	: Flammable liquid and vapor.
Explosion hazard	: May form flammable/explosive vapor-air mixture.

5.3. Special protective equipment and precautions for fire-fighters

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
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	: Avoid breathing dust, mist or spray.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

For containment	: Dike and contain spill. Dispose as hazardous waste. Comply with local regulations for disposal.
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Methods for cleaning up : For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling : No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Avoid breathing dust, mist or spray.
Hygiene measures : Wash Both hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.
Storage conditions : Store at room temperature away from light and moisture.
Incompatible materials : Heat sources.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ROHS PBDE NATIVE PAR SPIKE UNLABELED IN NONANE	
USA - ACGIH - Occupational Exposure Limits	
Local name	Nonane
ACGIH OEL TWA [ppm]	200 ppm USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	CNS impair
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
N-NONANE UNLABELED (111-84-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Nonane
ACGIH OEL TWA [ppm]	200 ppm USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	CNS impair
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	1050 mg/m ³ USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
OSHA PEL TWA [2]	200 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
OSHA PEL C	1050 California permissible exposure limits for chemical contaminants.
OSHA PEL C [ppm]	200 ppm California permissible exposure limits for chemical contaminants.

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N-NONANE UNLABELED (111-84-2)	
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	1050 mg/m ³ USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	200 ppm USA. NIOSH Recommended Exposure Limits
Remark (NIOSH)	Central Nervous System impairment
DECABDE (BDE-209) UNLABELED (1163-19-5)	
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	5 mg/m ³
2,2',3,3',4,4',5,6,6'-NONABDE (BDE-207) UNLABELED (437701-79-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',3,3',4,4',5,5',6-NONABDE (BDE-206) UNLABELED (63387-28-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
4-MONOBDE (BDE-3) UNLABELED (101-55-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4-TRIBDE (BDE-17) UNLABELED (147217-75-2)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,4,4'-TRIBDE (BDE-28) UNLABELED (41318-75-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,3',4',6-TETRABDE (BDE-71) UNLABELED (189084-62-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

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2,3',4,4'-TETRABDE (BDE-66) UNLABELED (189084-61-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,5'-TETRABDE (BDE-49) UNLABELED (243982-82-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED (68631-49-2)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED (207122-16-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED (189084-67-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

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2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED (189084-58-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',3,4,4',5,5',6-OCTABDE (BDE-203) UNLABELED (337513-72-1)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) UNLABELED (446255-56-7)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED (60348-60-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8 (Unlabeled))	
No additional information available	

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

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

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Hand protection:
Wear suitable protective clothing and gloves
Eye protection:
Wear safety glasses with side shields (or goggles) and a face shield.
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: 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
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Flammable liquid and vapor.
Vapor pressure	: 5.69 hPa (4.27 mmHg) at 25 °C (77 °F)
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 0.718 g/ml at 25 °C (77 °F)
Molecular mass	: 128.3 g/mol
Solubility	: Water: 0.0002 %
Partition coefficient n-octanol/water (Log Pow)	: 5.65
Auto-ignition temperature	: 205 °C (401 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: ≤ 1.008 mm ² /s at 20 °C (68 °F)
Viscosity, dynamic	: No data available
Explosion limits	: 0.87 – 2.9 % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

ROHS PBDE NATIVE PAR SPIKE UNLABELED IN NONANE	
LC50 Inhalation - Rat	23760 mg/m ³ male - 4 h
ATE US (gases)	3200 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
Additional data	Skin corrosion/irritation, Dermal, rat: Result: Skin Irritation (Draize Test) S. Typhimurium Result negative

N-NONANE UNLABELED (111-84-2)	
LC50 Inhalation - Rat	23760 mg/m ³ male - 4 h
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative

DECABDE (BDE-209) UNLABELED (1163-19-5)	
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight

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DECABDE (BDE-209) UNLABELED (1163-19-5)	
ATE US (gases)	4500 ppmV/4h
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
STOT-single exposure	: May cause drowsiness or dizziness.
N-NONANE UNLABELED (111-84-2)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,3',4,4',5,6,6'-NONABDE (BDE-207) UNLABELED (437701-79-6)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,3',4,4',5,5',6-NONABDE (BDE-206) UNLABELED (63387-28-0)	
STOT-single exposure	May cause drowsiness or dizziness.
4-MONOBDE (BDE-3) UNLABELED (101-55-3)	
STOT-single exposure	May cause drowsiness or dizziness.
2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)	
STOT-single exposure	May cause drowsiness or dizziness.
4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',4-TRIBDE (BDE-17) UNLABELED (147217-75-2)	
STOT-single exposure	May cause drowsiness or dizziness.
2,4,4'-TRIBDE (BDE-28) UNLABELED (41318-75-6)	
STOT-single exposure	May cause drowsiness or dizziness.
2,3',4',6-TETRABDE (BDE-71) UNLABELED (189084-62-6)	
STOT-single exposure	May cause drowsiness or dizziness.
2,3',4,4'-TETRABDE (BDE-66) UNLABELED (189084-61-5)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',4,5'-TETRABDE (BDE-49) UNLABELED (243982-82-3)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)	
STOT-single exposure	May cause respiratory irritation.
3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)	
STOT-single exposure	May cause drowsiness or dizziness.
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)	
STOT-single exposure	May cause drowsiness or dizziness.

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2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED (68631-49-2)	
STOT-single exposure	May cause respiratory irritation.
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED (207122-16-5)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED (189084-67-1)	
STOT-single exposure	May cause drowsiness or dizziness.
2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED (189084-58-0)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,4,4',5,5',6-OCTABDE (BDE-203) UNLABELED (337513-72-1)	
STOT-single exposure	May cause drowsiness or dizziness.
2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)	
STOT-single exposure	May cause drowsiness or dizziness.
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) UNLABELED (446255-56-7)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED (60348-60-9)	
STOT-single exposure	May cause drowsiness or dizziness.
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)	
STOT-single exposure	May cause drowsiness or dizziness.
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8 (Unlabeled))	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: $\leq 1.008 \text{ mm}^2/\text{s}$ at 20 °C (68 °F)
N-NONANE UNLABELED (111-84-2)	
Viscosity, kinematic	$\leq 1.008 \text{ mm}^2/\text{s}$ at 20 °C (68 °F)
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: Harmful if inhaled.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.

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

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.

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

LC50 - Fish [1]	50.9 mg/l Lepomis macrochirus (Bluegill) - 24 h
LC50 - Fish [2]	9.6 ppm Lepomis macrochirus (Bluegill) - 48 h

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

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

N-NONANE UNLABELED (111-84-2)

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

12.4. Mobility in soil

2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)

Ecology - soil	Not available.
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12.5. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN1920
UN-No. (TDG) : UN1920

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UN-No. (IMDG) : 1920
UN-No. (IATA) : 1920

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nonanes
Proper Shipping Name (TDG) : NONANES
Proper Shipping Name (IMDG) : NONANES
Proper Shipping Name (IATA) : Nonanes

14.3. Transport hazard class(es)

DOT

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



TDG

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



IMDG

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



IATA

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



14.4. Packing group

Packing group (DOT) : III
Packing group (TDG) : III
Packing group (IMDG) : III
Packing group (IATA) : III

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14.5. Environmental hazards

Marine pollutant : Yes (IMDG only)



Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1920

DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: t_r is the maximum mean bulk temperature during transport, t_f is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (t_f) and the maximum mean bulk temperature during transportation (t_r) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d_{15} and d_{50} are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

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

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

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

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

TDG

UN-No. (TDG) : UN1920

Explosive Limit and Limited Quantity Index : 5 L

Excepted quantities (TDG) : E1

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 60 L

Emergency Response Guide (ERG) Number : 128

IMDG

Limited quantities (IMDG) : 5 L

Excepted quantities (IMDG) : E1

Packing instructions (IMDG) : P001, LP01

IBC packing instructions (IMDG) : IBC03

Tank instructions (IMDG) : T2

Tank special provisions (IMDG) : TP1

EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS

EmS-No. (Spillage) : S-E - SPILLAGE SCHEDULE Echo - FLAMMABLE LIQUIDS, FLOATING ON WATER

Stowage category (IMDG) : A

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Flash point (IMDG)	:	'
Properties and observations (IMDG)	:	Colourless liquids. Explosive limits: 0.8% to 2.9% normal-NONANE: flashpoint 31°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.
MFAG-No	:	128

IATA

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y344
PCA limited quantity max net quantity (IATA)	:	10L
PCA packing instructions (IATA)	:	355
PCA max net quantity (IATA)	:	60L
CAO packing instructions (IATA)	:	366
CAO max net quantity (IATA)	:	220L
ERG code (IATA)	:	3L

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

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SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
N-NONANE UNLABELED	111-84-2	Present	Active	T
DECABDE (BDE-209) UNLABELED	1163-19-5	Not present	-	
2,2',3,3',4,4',5,6'-NONABDE (BDE-207) UNLABELED	437701-79-6	Not present	-	
2,2',3,3',4,4',5,5',6'-NONABDE (BDE-206) UNLABELED	63387-28-0	Not present	-	
4-MONOBDE (BDE-3) UNLABELED	101-55-3	Not present	-	
2,4-DIBDE (BDE-7) UNLABELED	171977-44-9	Not present	-	
4,4'-DIBDE (BDE-15) UNLABELED	2050-47-7	Not present	-	
2,2',4-TRIBDE (BDE-17) UNLABELED	147217-75-2	Not present	-	
2,4,4'-TRIBDE (BDE-28) UNLABELED	41318-75-6	Not present	-	
2,3',4',6-TETRABDE (BDE-71) UNLABELED	189084-62-6	Not present	-	
2,3',4,4'-TETRABDE (BDE-66) UNLABELED	189084-61-5	Not present	-	
2,2',4,5'-TETRABDE (BDE-49) UNLABELED	243982-82-3	Not present	-	
2,2',4,4'-TETRABDE (BDE-47) UNLABELED	5436-43-1	Not present	-	
3,3',4,4'-TETRABDE (BDE-77) UNLABELED	93703-48-1	Not present	-	
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED	189084-66-0	Not present	-	

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Name	CAS-No.	Listing	Commercial status	Flags
2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED	68631-49-2	Not present	-	
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED	35854-94-5	Not present	-	
2,2',3,4,4',5,6'-HEPTABDE (BDE-183) UNLABELED	207122-16-5	Not present	-	
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED	207122-15-4	Not present	-	
2,2',3,4,4',5,6'-HEPTABDE (BDE-181) UNLABELED	189084-67-1	Not present	-	
2,3,4,4',5,6'-HEXABDE (BDE-166) UNLABELED	189084-58-0	Not present	-	
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED	182677-30-1	Not present	-	
2,2',3,4,4',5,5',6'-OCTABDE (BDE-203) UNLABELED	337513-72-1	Not present	-	
2,3,3',4,4',5,6'-HEPTABDE (BDE-190) UNLABELED	189084-68-2	Not present	-	
2,3,3',4,4',5,5',6'-OCTABDE (BDE-205) UNLABELED	446255-56-7	Not present	-	
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED	182346-21-0	Not present	-	
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED	60348-60-9	Not present	-	
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED	366791-32-4	Not present	-	
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (Unlabeled)	189084-64-8	Not present	-	

N-NONANE UNLABELED (111-84-2)

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

DECABDE (BDE-209) UNLABELED (1163-19-5)

SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
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2,2',3,3',4,4',5,6,6'-NONABDE (BDE-207) UNLABELED (437701-79-6)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
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2,2',3,3',4,4',5,5',6'-NONABDE (BDE-206) UNLABELED (63387-28-0)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
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4-MONOBDE (BDE-3) UNLABELED (101-55-3)

SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

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2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
2,2',4-TRIBDE (BDE-17) UNLABELED (147217-75-2)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
2,4,4'-TRIBDE (BDE-28) UNLABELED (41318-75-6)	
SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
2,3',4',6-TETRABDE (BDE-71) UNLABELED (189084-62-6)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
2,3',4,4'-TETRABDE (BDE-66) UNLABELED (189084-61-5)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
2,2',4,5'-TETRABDE (BDE-49) UNLABELED (243982-82-3)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
2,2',4,4'-TETRABDE (BDE-47) UNLABELED (5436-43-1)	
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 Delayed (chronic) health hazard
3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED (189084-66-0)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

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2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED (68631-49-2)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

2,2',3,4,4',5',6-HEPTABDE (BDE-183) UNLABELED (207122-16-5)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED (189084-67-1)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED (189084-58-0)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)	
Not subject to reporting requirements of the United States SARA Section 313	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

2,2',3,4,4',5,5',6-OCTABDE (BDE-203) UNLABELED (337513-72-1)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED (189084-68-2)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

2,3,3',4,4',5,5',6-OCTABDE (BDE-205) UNLABELED (446255-56-7)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

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2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

2,2',4,4',5-PENTABDE (BDE-99) UNLABELED (60348-60-9)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302

15.2. International regulations

CANADA

ROHS PBDE NATIVE PAR SPIKE UNLABELED IN NONANE
Listed on the Canadian DSL (Domestic Substances List)

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

DECABDE (BDE-209) UNLABELED (1163-19-5)
Listed on the Canadian DSL (Domestic Substances List)

2,2',3,3',4,4',5,6,6'-NONABDE (BDE-207) UNLABELED (437701-79-6)
Not listed on the Canadian DSL (Domestic Substances List)

2,2',3,3',4,4',5,5',6-NONABDE (BDE-206) UNLABELED (63387-28-0)
Not listed on the Canadian DSL (Domestic Substances List)

4-MONOBDE (BDE-3) UNLABELED (101-55-3)
Not listed on the Canadian DSL (Domestic Substances List)

2,4-DIBDE (BDE-7) UNLABELED (171977-44-9)
Not listed on the Canadian DSL (Domestic Substances List)

4,4'-DIBDE (BDE-15) UNLABELED (2050-47-7)
Not listed on the Canadian DSL (Domestic Substances List)

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

Not listed on the Canadian DSL (Domestic Substances List)

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

Not listed on the Canadian DSL (Domestic Substances List)

2,3',4',6'-TETRABDE (BDE-71) UNLABELED (189084-62-6)

Not listed on the Canadian DSL (Domestic Substances List)

2,3',4,4'-TETRABDE (BDE-66) UNLABELED (189084-61-5)

Not listed on the Canadian DSL (Domestic Substances List)

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

Not listed on the Canadian DSL (Domestic Substances List)

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

Not listed on the Canadian DSL (Domestic Substances List)

3,3',4,4'-TETRABDE (BDE-77) UNLABELED (93703-48-1)

Not listed on the Canadian DSL (Domestic Substances List)

2,3',4,4',6'-PENTABDE (BDE-119) UNLABELED (189084-66-0)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED (68631-49-2)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED (35854-94-5)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',3,4,4',5',6'-HEPTABDE (BDE-183) UNLABELED (207122-16-5)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED (207122-15-4)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',3,4,4',5,6'-HEPTABDE (BDE-181) UNLABELED (189084-67-1)

Not listed on the Canadian DSL (Domestic Substances List)

2,3,4,4',5,6'-HEXABDE (BDE-166) UNLABELED (189084-58-0)

Not listed on the Canadian DSL (Domestic Substances List)

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2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED (182677-30-1)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',3,4,4',5,5',6-OCTABDE (BDE-203) UNLABELED (337513-72-1)

Not listed on the Canadian DSL (Domestic Substances List)

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

Not listed on the Canadian DSL (Domestic Substances List)

2,3,3',4,4',5,5',6-OCTABDE (BDE-205) UNLABELED (446255-56-7)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED (182346-21-0)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',4,4',5-PENTABDE (BDE-99) UNLABELED (60348-60-9)

Not listed on the Canadian DSL (Domestic Substances List)

3,3',4,4',5-PENTABDE (BDE-126) UNLABELED (366791-32-4)

Not listed on the Canadian DSL (Domestic Substances List)

2,2',4,4',6-PENTABDE (BDE-100) UNLABELED (189084-64-8 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

ROHS PBDE NATIVE PAR SPIKE UNLABELED IN NONANE

State or local regulations	U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List
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Component	State or local regulations
N-NONANE UNLABELED(111-84-2)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List
DECABDE (BDE-209) UNLABELED(1163-19-5)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List
2,2',3,3',4,4',5,6,6'-NONABDE (BDE-207) UNLABELED(437701-79-6)	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

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Component	State or local regulations
2,2',3,3',4,4',5,5',6-NONABDE (BDE-206) UNLABELED(63387-28-0)	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
4-MONOBDE (BDE-3) UNLABELED(101-55-3)	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
2,4-DIBDE (BDE-7) UNLABELED(171977-44-9)	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
4,4'-DIBDE (BDE-15) UNLABELED(2050-47-7)	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
2,2',4-TRIBDE (BDE-17) UNLABELED(147217-75-2)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,4,4'-TRIBDE (BDE-28) UNLABELED(41318-75-6)	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',6-TETRABDE (BDE-71) UNLABELED(189084-62-6)	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'-TETRABDE (BDE-66) UNLABELED(189084-61-5)	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
2,2',4,5'-TETRABDE (BDE-49) UNLABELED(243982-82-3)	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
2,2',4,4'-TETRABDE (BDE-47) UNLABELED(5436-43-1)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
3,3',4,4'-TETRABDE (BDE-77) UNLABELED(93703-48-1)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3',4,4',6-PENTABDE (BDE-119) UNLABELED(189084-66-0)	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
2,2',4,4',5,5'-HEXABDE (BDE-153) UNLABELED(68631-49-2)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,2',4,4',6,6'-HEXABDE (BDE-155) UNLABELED(35854-94-5)	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
2,2',3,4,4',5,5',6-HEPTABDE (BDE-183) UNLABELED(207122-16-5)	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
2,2',4,4',5,6'-HEXABDE (BDE-154) UNLABELED(207122-15-4)	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
2,2',3,4,4',5,6-HEPTABDE (BDE-181) UNLABELED(189084-67-1)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3,4,4',5,6-HEXABDE (BDE-166) UNLABELED(189084-58-0)	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
2,2',3,4,4',5'-HEXABDE (BDE-138) UNLABELED(182677-30-1)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,2',3,4,4',5,5',6-OCTABDE (BDE-203) UNLABELED(337513-72-1)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3,3',4,4',5,6-HEPTABDE (BDE-190) UNLABELED(189084-68-2)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List

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Component	State or local regulations
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) UNLABELED(446255-56-7)	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
2,2',3,4,4'-PENTABDE (BDE-85) UNLABELED(182346-21-0)	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
2,2',4,4',5-PENTABDE (BDE-99) UNLABELED(60348-60-9)	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
3,3',4,4',5-PENTABDE (BDE-126) UNLABELED(366791-32-4)	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
2,2',4,4',6-PENTABDE (BDE-100) UNLABELED(189084-64-8 (Unlabeled))	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

SECTION 16: Other information

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

Revision date : 10/02/2023

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases	
H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
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
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Safety Data Sheet (SDS), USA

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