



TWO COLUMN DIOXIN & FURAN CLEAN UP SPIKE (13C12, 99%)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 1/4/2023 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : TWO COLUMN DIOXIN & FURAN CLEAN UP SPIKE (13C12, 99%)
Product code : EDF-5430

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 2	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/vapors/spray.
P264 - Wash hands, forearms and face 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 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 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.
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 (CO₂), dry extinguishing powder 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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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	99.95828	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
TOLUENE UNLABELED	CAS-No.: 108-88-3	0.041588	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401
OCTACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 39001-02-0 (Unlabeled)	0.000014	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 3268-87-9 (Unlabeled)	0.000014	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 76523-40-5	0.000007	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 40321-76-4 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 39227-28-6 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 19408-74-3 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 57652-85-7 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%)	CAS-No.: 35822-46-9 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 89059-46-1	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 57117-31-4 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 57117-44-9 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 57117-46-6 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 67562-39-4 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413

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Name	Product identifier	%	GHS US classification
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 55673-89-7 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 60851-34-5 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 70648-26-9 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%)	CAS-No.: 72918-21-9 (Unlabeled)	0.000007	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Aquatic Chronic 4, H413

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell. Give oxygen or artificial respiration if necessary.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Do not induce vomiting. Call a physician immediately.

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

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

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

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5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

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

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. 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.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Avoid all contact with skin, eyes, or clothing. Keep away from sources of ignition - No smoking. Do not breathe gas/fumes/vapor/spray (appropriate wording to be specified by the manufacturer). Take precautionary measures against static discharges.
- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing fume, gas, mist, spray, vapors. Avoid contact with skin and eyes.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in a well-ventilated place. Keep container tightly closed. Keep dry. Ground/bond container and receiving equipment.
- Storage conditions : Store at room temperature away from light and moisture.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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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.
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
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.
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
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (76523-40-5)	
No additional information available	
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (40321-76-4 (Unlabeled))	
No additional information available	

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1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (39227-28-6 (Unlabeled))	
No additional information available	
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (19408-74-3 (Unlabeled))	
No additional information available	
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (57652-85-7 (Unlabeled))	
No additional information available	
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (35822-46-9 (Unlabeled))	
No additional information available	
2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%) (89059-46-1)	
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.
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))	
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.
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))	
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.
1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-46-6 (Unlabeled))	
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.
OCTACHLORODIBENZOFURAN (13C12, 99%) (39001-02-0 (Unlabeled))	
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.
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%) (67562-39-4 (Unlabeled))	
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.
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%) (55673-89-7 (Unlabeled))	
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.
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))	
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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OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (3268-87-9 (Unlabeled))	
No additional information available	
TOLUENE UNLABELED (108-88-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	20 ppm USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	Visual impairment. Female reproductive. Pregnancy loss. 2015 Adoption. Substances for which there is a Biological Exposure Index or Indices (see BEI® section). Not classifiable as a human carcinogen.; Component: Toluene CAS-No.: 108-88-3 Parameters: Toluene Value: 0.0300 mg/l Biological specimen: Urine Remarks: End of shift (As soon as possible after exposure ceases) Basis: ACGIH - Biological Exposure Indices (BEI); Component: Toluene CAS-No.: 108-88-3 Parameters: Toluene Value: 0.0200 mg/l Biological specimen: In blood Remarks: Prior to last shift of workweek Basis: ACGIH - Biological Exposure Indices (BEI); Component: Toluene CAS-No.: 108-88-3 Parameters: o-Cresol Value: 0.3000 mg/g Biological specimen: Urine Remarks: End of shift (As soon as possible after exposure ceases) Basis: ACGIH - Biological Exposure Indices (BEI)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	375 mg/m³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL TWA [2]	100 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL STEL [1]	560 mg/m³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL STEL [2]	150 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL C [ppm]	300 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-2
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	500 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-2
Remark (OSHA)	OSHA PEL (TWA) - 200 ppm - USA. Occupational Exposure Limits (OSHA) - Table Z-2. Remarks: Z37.12-1967
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	375 mg/m³ USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	100 ppm USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL	560 mg/m³ USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL [ppm]	150 ppm USA. NIOSH Recommended Exposure Limits
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (70648-26-9 (Unlabeled))	
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.
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%) (72918-21-9 (Unlabeled))	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

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8.3. Individual protection measures/Personal protective equipment

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

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	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: No data available aromatic
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)	: Not applicable.
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)

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Viscosity, dynamic	: No data available
Explosion limits	: Lower explosion limit: 0.87 – 2.9 vol % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

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.

TWO COLUMN DIOXIN & FURAN CLEAN UP SPIKE (13C12, 99%)	
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
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

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N-NONANE UNLABELED (111-84-2)	
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (76523-40-5)	
ATE US (oral)	500 mg/kg body weight
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (40321-76-4 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (39227-28-6 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (19408-74-3 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (57652-85-7 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (35822-46-9 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%) (89059-46-1)	
ATE US (oral)	500 mg/kg body weight
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-46-6 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
OCTACHLORODIBENZOFURAN (13C12, 99%) (39001-02-0 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%) (67562-39-4 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%) (55673-89-7 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (3268-87-9 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
TOLUENE UNLABELED (108-88-3)	
LD50 oral rat	> 5580 mg/kg
LD50 dermal rabbit	12196 mg/kg

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TOLUENE UNLABELED (108-88-3)	
LC50 Inhalation - Rat	12,500 - 28,800 mg/m ³ - 4 h
ATE US (dermal)	12196 mg/kg body weight
ATE US (vapors)	12.5 mg/l/4h
ATE US (dust, mist)	12.5 mg/l/4h
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (70648-26-9 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%) (72918-21-9 (Unlabeled))	
ATE US (oral)	500 mg/kg body weight
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
TOLUENE UNLABELED (108-88-3)	
IARC group	3 - Not classifiable
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.
TOLUENE UNLABELED (108-88-3)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified
TOLUENE UNLABELED (108-88-3)	
STOT-repeated exposure	May cause damage to organs (kidneys, liver, urinary bladder, brain) through prolonged or repeated exposure (Dermal, Inhalation, oral).
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: ≤ 1.008 mm ² /s at 20 °C (68 °F)
N-NONANE UNLABELED (111-84-2)	
Viscosity, kinematic	≤ 1.008 mm ² /s at 20 °C (68 °F)
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects	: May cause drowsiness or dizziness.
Symptoms/effects after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes skin irritation. May be harmful in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life.

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TOLUENE UNLABELED (108-88-3)	
EC50 - Crustacea [1]	8 mg/l Daphnia magna (Water flea) - 24h
LC50 - Fish [2]	7.63 mg/l Oncorhynchus mykiss (Rainbow trout) - 96 h
EC50 - Crustacea [2]	6 mg/l Daphnia magna (Water flea) - Immobilization - 48 h
ErC50 algae	245 mg/l Chlorella vulgaris (Fresh water algae) - 24 h
ErC50 other aquatic plants	10 mg/l Pseudokirchneriella subcapitata (Green algae) - 24 h
NOEC (chronic)	5.44 mg/l Pimephales promelas (fathead minnow) - 7 d

12.2. Persistence and degradability

2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))	
Persistence and degradability	Not available.
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))	
Persistence and degradability	Not available.
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))	
Persistence and degradability	Not available.
TOLUENE UNLABELED (108-88-3)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

TWO COLUMN DIOXIN & FURAN CLEAN UP SPIKE (13C12, 99%)	
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.
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))	
Bioaccumulative potential	Not available.
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))	
Bioaccumulative potential	Not available.
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))	
Bioaccumulative potential	Not available.
TOLUENE UNLABELED (108-88-3)	
BCF - Fish [1]	0.05 mg/l Leuciscus idus (Golden orfe) - 3 d
Bioconcentration factor (BCF REACH)	90

12.4. Mobility in soil

2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))	
Ecology - soil	Not available.

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1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))	
Ecology - soil	Not available.
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))	
Ecology - soil	Not available.

12.5. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Disposal methods

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

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

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN1920

UN-No. (TDG) : UN1920

UN-No. (IMDG) : 1920

UN-No. (IATA) : 1920

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nonanes

Proper Shipping Name (TDG) : NONANES

Proper Shipping Name (IMDG) : NONANES

Proper Shipping Name (IATA) : Nonanes

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 3

Hazard labels (DOT) : 3



TDG

Transport hazard class(es) (TDG) : 3

Hazard labels (TDG) : 3



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IMDG

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



IATA

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



14.4. Packing group

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

14.5. Environmental hazards

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: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 242

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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
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):

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Name	CAS-No.	Listing	Commercial status	Flags
N-NONANE UNLABELED	111-84-2	Present	Active	T
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	76523-40-5	Not present	-	
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%)	40321-76-4 (Unlabeled)	Not present	-	
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)	39227-28-6 (Unlabeled)	Not present	-	
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)	19408-74-3 (Unlabeled)	Not present	-	
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)	57652-85-7 (Unlabeled)	Not present	-	
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%)	35822-46-9 (Unlabeled)	Not present	-	
2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%)	89059-46-1	Not present	-	
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%)	57117-31-4 (Unlabeled)	Not present	-	
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)	57117-44-9 (Unlabeled)	Not present	-	
1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%)	57117-46-6 (Unlabeled)	Not present	-	
OCTACHLORODIBENZOFURAN (13C12, 99%)	39001-02-0 (Unlabeled)	Not present	-	
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%)	67562-39-4 (Unlabeled)	Not present	-	
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%)	55673-89-7 (Unlabeled)	Not present	-	
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)	60851-34-5 (Unlabeled)	Not present	-	
OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%)	3268-87-9 (Unlabeled)	Not present	-	
TOLUENE UNLABELED	108-88-3	Present	Active	
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)	70648-26-9 (Unlabeled)	Not present	-	
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%)	72918-21-9 (Unlabeled)	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

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2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (76523-40-5)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (40321-76-4 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (39227-28-6 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (19408-74-3 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (57652-85-7 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (35822-46-9 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%) (89059-46-1)	
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.
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))	
Not subject to reporting requirements of the United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-46-6 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
OCTACHLORODIBENZOFURAN (13C12, 99%) (39001-02-0 (Unlabeled))	
Not subject to reporting requirements of the United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

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1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%) (67562-39-4 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%) (55673-89-7 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (3268-87-9 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

TOLUENE UNLABELED (108-88-3)	
CERCLA RQ	1000 lb
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
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (70648-26-9 (Unlabeled))	
Not subject to reporting requirements of the United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.

1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%) (72918-21-9 (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

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

2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (76523-40-5)	
Not listed on the Canadian DSL (Domestic Substances List)	

1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (40321-76-4 (Unlabeled))	
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)	

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1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (39227-28-6 (Unlabeled))

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

1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (19408-74-3 (Unlabeled))

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

1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (57652-85-7 (Unlabeled))

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

1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (35822-46-9 (Unlabeled))

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

2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%) (89059-46-1)

Not listed on the Canadian DSL (Domestic Substances List)

2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

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

1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-46-6 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

OCTACHLORODIBENZOFURAN (13C12, 99%) (39001-02-0 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%) (67562-39-4 (Unlabeled))

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

1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%) (55673-89-7 (Unlabeled))

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

2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (3268-87-9 (Unlabeled))

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

TOLUENE UNLABELED (108-88-3)

Listed on the Canadian DSL (Domestic Substances List)

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1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (70648-26-9 (Unlabeled))

Not listed on the Canadian DSL (Domestic Substances List)

1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%) (72918-21-9 (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

TWO COLUMN DIOXIN & FURAN CLEAN UP SPIKE (13C12, 99%)

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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2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (76523-40-5)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	Yes	Yes	Yes		

1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (40321-76-4 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (39227-28-6 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (19408-74-3 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

TWO COLUMN DIOXIN & FURAN CLEAN UP SPIKE (13C12, 99%)

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1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%) (57652-85-7 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (35822-46-9 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%) (89059-46-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (57117-44-9 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-46-6 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

OCTACHLORODIBENZOFURAN (13C12, 99%) (39001-02-0 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

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OCTACHLORODIBENZOFURAN (13C12, 99%) (39001-02-0 (Unlabeled))					
Yes	No	No	No		

1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%) (67562-39-4 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%) (55673-89-7 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (60851-34-5 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%) (3268-87-9 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

TOLUENE UNLABELED (108-88-3)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No	7000 µg/day	

1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%) (70648-26-9 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

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1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%) (72918-21-9 (Unlabeled))					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

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
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)(76523-40-5)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN (13C12, 99%)(40321-76-4 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)(39227-28-6 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)(19408-74-3 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN (13C12, 99%)(57652-85-7 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN (13C12, 99%)(35822-46-9 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
2,3,7,8-TETRACHLORODIBENZOFURAN (13C12, 99%)(89059-46-1)	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
2,3,4,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-31-4 (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
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)(57117-44-9 (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
1,2,3,7,8-PENTACHLORODIBENZOFURAN (13C12, 99%) (57117-46-6 (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
OCTACHLORODIBENZOFURAN (13C12, 99%)(39001-02-0 (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
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN (13C12, 99%)(67562-39-4 (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
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN (13C12, 99%)(55673-89-7 (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
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)(60851-34-5 (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
OCTACHLORODIBENZO-P-DIOXIN (13C12, 99%)(3268-87-9 (Unlabeled))	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - New Jersey - Right to Know Hazardous Substance List
TOLUENE UNLABELED(108-88-3)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN (13C12, 99%)(70648-26-9 (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

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Component	State or local regulations
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN (13C12, 99%)(72918-21-9 (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

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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
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life
H413	May cause long lasting harmful effects to aquatic life

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.