



2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE

Safety Data Sheet

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

Date of issue: 16/03/2018
ED-5607

Revision date:

Version: 1.0

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

1.1. Product identifier

Product form : Mixtures
Product name : 2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE
Product code : ED-5607

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

1.2.1. Relevant identified uses

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

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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

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

Emergency telephone number

Emergency numbers:

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

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

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

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

R10
Xn; R20
Xn; R65
Xi; R36/38
R67

Full text of R-phrases: see section 16

GHS-US classification

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

Full text of H statements : see section 16

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Adverse physicochemical, human health and environmental effects

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

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

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

Precautionary statements (CLP)

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

GHS-US labelling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

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

Precautionary statements (GHS-US)

: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
P233 - Keep container tightly closed
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing fume, mist, spray, vapours
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 labelling on this label)
P331 - Do NOT induce vomiting
P332+P313 - If skin irritation occurs: Get medical advice/attention

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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 (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

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC No) 203-913-4	99.999968	R10 Xn; R20 Xn; R65 Xi; R36/38 R67
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	(CAS No) 1746-01-6 (Unlabeled)	0.000014	Xn; R65 R53 Xn; R20/22
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	(CAS No) 114423-99-3 (Unlabeled)	0.000014	T+; R26/27/28 Carc.Cat.1; R45
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED	(CAS No) 1746-01-6	0.000001	Xn; R22 Xn; R65 R53
1,2,3,4-TETRACDD UNLABELED	(CAS No) 30746-58-8	0.000001	T+; R26/27/28 Carc.Cat.1; R45
1,2,3,9-TETRACDD UNLABELED	(CAS No) 71669-26-6	0.000001	T+; R26/27/28 Carc.Cat.1; R45
1,2,3,7-TETRACDD UNLABELED	(CAS No) 67028-18-6	0.000001	T+; R26/27/28 Carc.Cat.1; R45

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC No) 203-913-4	99.999968	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	(CAS No) 1746-01-6 (Unlabeled)	0.000014	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	(CAS No) 114423-99-3 (Unlabeled)	0.000014	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation:dust,mist), H330 Carc. 1A, H350
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED	(CAS No) 1746-01-6	0.000001	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,4-TETRACDD UNLABELED	(CAS No) 30746-58-8	0.000001	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation:dust,mist), H330 Carc. 1A, H350

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
1,2,3,9-TETRACDD UNLABELED	(CAS No) 71669-26-6	0.000001	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation:dust,mist), H330 Carc. 1A, H350
1,2,3,7-TETRACDD UNLABELED	(CAS No) 67028-18-6	0.000001	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation:dust,mist), H330 Carc. 1A, H350

Name	Product identifier	%	GHS-US classification
N-NONANE UNLABELED	(CAS No) 111-84-2	99.999968	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 Asp. Tox. 1, H304
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	(CAS No) 1746-01-6 (Unlabeled)	0.000014	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%)	(CAS No) 114423-99-3 (Unlabeled)	0.000014	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Carc. 1A, H350
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED	(CAS No) 1746-01-6	0.000001	Acute Tox. 4 (Oral), H302 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
1,2,3,4-TETRACDD UNLABELED	(CAS No) 30746-58-8	0.000001	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Carc. 1A, H350
1,2,3,9-TETRACDD UNLABELED	(CAS No) 71669-26-6	0.000001	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Carc. 1A, H350
1,2,3,7-TETRACDD UNLABELED	(CAS No) 67028-18-6	0.000001	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 1 (Inhalation), H330 Carc. 1A, H350

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

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

Symptoms/injuries	: May cause drowsiness or dizziness.
Symptoms/injuries after inhalation	: Harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation. May be harmful in contact with skin.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be fatal if swallowed and enters airways. Risk of lung oedema.

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

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide. Alcohol resistant foam.
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5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

- Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.
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, vapours. Avoid contact with skin and eyes.

6.1.2. For emergency responders

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

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

- For containment : Dike and contain spill. Dispose as hazardous waste. Comply with local regulations for disposal.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

- For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Avoid all contact with skin, eyes, or clothing. Keep away from sources of ignition - No smoking. Do not breathe gas/fumes/vapour/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 vapours 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, vapours. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

- No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.00000000 ppm USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	CNS impair
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1050 mg/m ³ USA. NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm USA. NIOSH Recommended Exposure Limits
USA NIOSH	Remark (NIOSH)	Central Nervous System impairment

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE

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2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1050 mg/m ³ USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	1050 California permissible exposure limits for chemical contaminants.
USA OSHA	OSHA PEL (Ceiling) (ppm)	200 ppm California permissible exposure limits for chemical contaminants.

N-NONANE UNLABELED		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.00000000 ppm USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	CNS impair
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1050 mg/m ³ USA. NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm USA. NIOSH Recommended Exposure Limits
USA NIOSH	Remark (NIOSH)	Central Nervous System impairment
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1050 mg/m ³ USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	1050 California permissible exposure limits for chemical contaminants.
USA OSHA	OSHA PEL (Ceiling) (ppm)	200 ppm California permissible exposure limits for chemical contaminants.

8.2. Exposure controls

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



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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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

Physical state : Liquid
 Appearance : Liquid
 Molecular mass : 128.3 g/mol
 Colour : Colourless
 Odour : No data available
 Odour threshold : No data available
 pH : No data available
 Relative evaporation rate (butylacetate=1) : No data available
 Melting point : Not applicable
 Freezing point : -53 °C (- 63 °F) - lit
 Boiling point : 151 °C (304 °F) - lit
 Flash point : 31 °C (87.8 °F) - closed cup

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Auto-ignition temperature	: 205 °C (401 °F)
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 5.69 hPa (4.27 mmHg) at 25 °C (77 °F)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.718 g/ml at 25 °C (77 °F)
Solubility	: Water: 0.0002 % at 25 °C (77 °F) - slightly soluble
Log Pow	: 5.65
Log Kow	: No data available
Viscosity, kinematic	: 1.008 mm ² /s at 20 °C (68 °F)
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 0.87 - 2.9 % (V)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour. Vapours may form flammable mixture with air.

10.2. Chemical stability

Stable if stored under recommended conditions.

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 : Inhalation:vapour: Harmful if inhaled.

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE	
LC50 inhalation rat (mg/l)	23760 mg/m ³ male - 4 h
ATE CLP (gases)	3200.000 ppmv/4h
ATE CLP (vapours)	11.000 mg/l/4h
ATE CLP (dust,mist)	23.760 mg/l/4h
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED (1746-01-6)	
ATE CLP (oral)	500.000 mg/kg bodyweight
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (Unlabeled))	
ATE CLP (oral)	500.000 mg/kg bodyweight
1,2,3,4-TETRACDD UNLABELED (30746-58-8)	
ATE CLP (oral)	5.000 mg/kg bodyweight
ATE CLP (dermal)	5.000 mg/kg bodyweight
ATE CLP (dust,mist)	0.050 mg/l/4h
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (114423-99-3 (Unlabeled))	
ATE CLP (oral)	5.000 mg/kg bodyweight
ATE CLP (dermal)	5.000 mg/kg bodyweight
ATE CLP (dust,mist)	0.050 mg/l/4h

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1,2,3,9-TETRACDD UNLABELED (71669-26-6)	
ATE CLP (oral)	5.000 mg/kg bodyweight
ATE CLP (dermal)	5.000 mg/kg bodyweight
ATE CLP (dust,mist)	0.050 mg/l/4h

1,2,3,7-TETRACDD UNLABELED (67028-18-6)	
ATE CLP (oral)	5.000 mg/kg bodyweight
ATE CLP (dermal)	5.000 mg/kg bodyweight
ATE CLP (dust,mist)	0.050 mg/l/4h

N-NONANE UNLABELED	
LC50 inhalation rat (mg/l)	23760 mg/m ³ male - 4 h
ATE CLP (gases)	3200.000 ppmv/4h
ATE CLP (vapours)	11.000 mg/l/4h
ATE CLP (dust,mist)	23.760 mg/l/4h
Skin corrosion/irritation, Dermal, rat	Result: Skin Irritation (Draize Test)
Additional information	: S. Typhimurium Result: negative

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause drowsiness or dizziness. May cause drowsiness or dizziness
STOT-repeated exposure	: Not classified

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight/day female (OECD Test Guideline 408)

N-NONANE UNLABELED	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight/day female (OECD Test Guideline 408)

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

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
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2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE	
EC50 Daphnia 1	0.2 mg/l static test EC50 - Daphnia magna (Water flea) - 48 h

N-NONANE UNLABELED	
EC50 Daphnia 1	0.2 mg/l static test EC50 - Daphnia magna (Water flea) - 48 h

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.

N-NONANE UNLABELED	
Log Pow	5.65

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N-NONANE UNLABELED

Bioaccumulative potential	Indication of bioaccumulation.
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

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

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

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

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nonanes
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : III - Minor Danger

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

DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 242
Marine pollutant : No

14.3. Additional information

Emergency Response Guide (ERG) Number : 128

Other information : No supplementary information available.

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Overland transport

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



Orange plates :

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

Transport by sea

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

Air transport

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

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED (1746-01-6)	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (Unlabeled))	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	

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2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (Unlabeled))	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
1,2,3,4-TETRACDD UNLABELED (30746-58-8)	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (114423-99-3 (Unlabeled))	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.
1,2,3,9-TETRACDD UNLABELED (71669-26-6)	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
1,2,3,7-TETRACDD UNLABELED (67028-18-6)	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313
N-NONANE UNLABELED (111-84-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.

15.2. International regulations

CANADA

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE	
Listed on the Canadian DSL (Domestic Substances List)	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED (1746-01-6)	
Not listed on the Canadian DSL (Domestic Substances List)	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (Unlabeled))	
Not listed on the Canadian DSL (Domestic Substances List)	
1,2,3,4-TETRACDD UNLABELED (30746-58-8)	
Not listed on the Canadian DSL (Domestic Substances List)	
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (114423-99-3 (Unlabeled))	
Not listed on the Canadian DSL (Domestic Substances List)	
1,2,3,9-TETRACDD UNLABELED (71669-26-6)	
Not listed on the Canadian DSL (Domestic Substances List)	
1,2,3,7-TETRACDD UNLABELED (67028-18-6)	
Not listed on the Canadian DSL (Domestic Substances List)	
N-NONANE UNLABELED (111-84-2)	
Listed on the Canadian DSL (Domestic Substances List)	

15.2.1. National regulations

2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (Unlabeled))

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE

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1,2,3,4-TETRACDD UNLABELED (30746-58-8)
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (114423-99-3 (Unlabeled))
1,2,3,9-TETRACDD UNLABELED (71669-26-6)
1,2,3,7-TETRACDD UNLABELED (67028-18-6)
N-NONANE UNLABELED (111-84-2)

15.3. US State regulations

2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE()	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED (1746-01-6)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	Yes	Yes	Yes	

2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (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)
Yes	Yes	Yes	Yes	

1,2,3,4-TETRACDD UNLABELED (30746-58-8)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (114423-99-3 (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)
Yes	No	No	No	

1,2,3,9-TETRACDD UNLABELED (71669-26-6)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
Yes	No	No	No	

1,2,3,7-TETRACDD UNLABELED (67028-18-6)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

N-NONANE UNLABELED (111-84-2)				
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2,3,7,8-TCDD ISOMER SPECIFICITY TEST MIXTURE (DB-5) IN NONANE

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N-NONANE UNLABELED (111-84-2)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN UNLABELED (1746-01-6)				
State or local regulations				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (1746-01-6 (Unlabeled))				
State or local regulations				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
1,2,3,4-TETRACDD UNLABELED (30746-58-8)				
State or local regulations				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
1,2,3,4-TETRACHLORODIBENZO-P-DIOXIN (13C12, 99%) (114423-99-3 (Unlabeled))				
State or local regulations				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
1,2,3,9-TETRACDD UNLABELED (71669-26-6)				
State or local regulations				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
1,2,3,7-TETRACDD UNLABELED (67028-18-6)				
State or local regulations				
U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List				
N-NONANE UNLABELED (111-84-2)				
State or local regulations				
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances				

SECTION 16: Other information

Other information

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

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

Acute Tox. 1 (Dermal)	Acute toxicity (dermal), Category 1
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 4	Hazardous to the aquatic environment — Chronic Hazard, Category 4
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3

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Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H226	Flammable liquid and vapour
H300	Fatal if swallowed
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H310	Fatal in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H350	May cause cancer
H413	May cause long lasting harmful effects to aquatic life
R10	Flammable
R20	Harmful by inhalation
R20/22	Harmful by inhalation and if swallowed
R22	Harmful if swallowed
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R36/38	Irritating to eyes and skin
R45	May cause cancer
R53	May cause long-term adverse effects in the aquatic environment
R65	Harmful: may cause lung damage if swallowed
R67	Vapours may cause drowsiness and dizziness
T+	Very toxic
Xi	Irritant
Xn	Harmful

NFPA health hazard

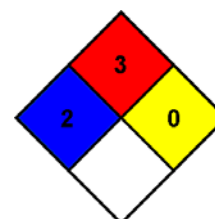
: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

: 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 3 Serious Hazard

Physical

: 0 Minimal Hazard

CIL Mixture SDS

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