PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/05/2016 Revision date: : Version: 1.0

ES-5019-A-CS3

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

1.1. Product identifier

Product form : Mixture

Product name. : PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)

Product code : ES-5019-A-CS3

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

1.2.1. Relevant identified uses

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

Full text of H-phrases: see section 16

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

Xn; R20
Xn; R65
Xi; R38
R10

Full text of R-phrases: see section 16

GHS-US classification

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

Adverse physicochemical, human health and environmental effects

Central Nervous System.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS02 GHS08 GHS07

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 dust, fume, gas, mist, spray, vapours
P264 - Wash Both hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, face protection, protective clothing, protective gloves

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS08 GHS07

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 dust, fume, gas, mist, spray, vapours
P264 - Wash Both hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection, face protection, protective clothing, protective gloves
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P321 - Specific treatment (see Hazard pictograms (CLP) on this label)
P331 - If swallowed, do NOT induce vomiting
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide., Dry chemical, Water spray for extinction
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up

P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.9997695	R10 Xn; R20 Xn; R65 R67 Xi; R38
4,4'-DDE (RING-13C12, 99%)	(CAS No) 72-55-9 (Unlabeled) (EC no) 200-784-6	0.0000348	Carc.Cat.3; R40 Xn; R22 N; R50/53
HEXACHLOROBENZENE (13C6, 99%)	(CAS No) 93952-14-8 (EC no) 204-273-9 (Unlabeled) (EC index no) 602-065-00-6	0.0000139	Xn; R20 N; R51/53 R10
DIELDRIN (13C12, 98-99%)	(CAS No) 60-57-1 (Unlabeled) (EC no) 200-484-5 (EC index no) 602-049-00-9	0.0000139	Carc.Cat.3; R40 T+; R27 T; R25 N; R50/53 R48
TRANS-NONACHLOR (13C10, 98%)	(CAS No) 39765-80-5 (Unlabeled)	0.0000139	Xn; R22 Xi; R36/37/38 N; R50/53
MIREX (13C10, 99%)	(CAS No) 2385-85-5 (Unlabeled) (EC no) 219-196-6 (EC index no) 602-077-00-1	0.0000139	Carc.Cat.3; R40 Repr.Cat.3; R62 Repr.Cat.3; R63 T; R24/25 N; R50/53
BETA-BHC (13C6, 99%)	(CAS No) 319-85-7 (Unlabeled) (EC no) 206-271-3 (EC index no) 602-042-00-0	0.0000139	Carc.Cat.2; R45 Xn; R21 N; R50/53
2,4'-DDT (RING-13C12, 99%)	(CAS No) 789-02-6 (Unlabeled) (EC no) 212-332-5	0.0000139	N; R50/53 Xn; R22 Xi; R36/37/38 T; R48/25 Carc.Cat.1; R45
CIS-HEPTACHLOR EPOXIDE (13C10, 99%)	(CAS No) 1024-57-3 (Unlabeled) (EC no) 213-831-0 (EC index no) 602-063-00-5	0.0000139	Carc.Cat.3; R40 T+; R28 N; R50/53
4,4'-DDT (RING-13C12, 99%)	(CAS No) 104215-84-1 (EC no) 200-024-3 (EC index no) 602-045-00-7	0.0000139	Carc.Cat.3; R40 T; R25 N; R50/53
2,2',3,3',4,5,5',6,6'-NONACB (PCB-208) (13C12, 99%)	(CAS No) 52663-77-1 (Unlabeled) (EC index no) 602-039-00-4	0.0000139	Xn; R48/20/21/22 N; R50/53 R33
LINDANE (13C6, 99%)	(CAS No) 58-89-9 (Unlabeled) (EC no) 200-401-2 (EC index no) 602-043-00-6	0.0000139	T; R25 Xn; R20/21 Xn; R48/22 R64 N; R50/53

Name	Product identifier	%	Classification according to Directive 67/548/EEC
3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%)	(CAS No) 93703-48-1 (Unlabeled)	0.0000104	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
2,2',3,4,4',6-HEXABDE (BDE-139) (13C12, 99%)	(CAS No) 488710-25-4	0.0000104	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
1,2,3,4-TCDD (13C12, 99%)	(CAS No) 116865-58-8	0.0000035	Muta.Cat.3; R68 T+; R27 Xn; R65 R53
HEXACHLOROBENZENE UNLABELED	(CAS No) 118-74-1 (EC no) 204-273-9 (EC index no) 602-065-00-6	0.0000014	Xn; R20 N; R51/53
BETA-BHC UNLABELED	(CAS No) 319-85-7 (EC no) 206-271-3 (EC index no) 602-042-00-0	0.0000014	N; R51/53
LINDANE UNLABELED	(CAS No) 58-89-9 (EC no) 200-401-2 (EC index no) 602-043-00-6	0.0000014	T; R25 Xn; R20/21 Xn; R48/22 R64 N; R50/53
TRANS-NONACHLOR UNLABELED	(CAS No) 39765-80-5	0.0000014	Xn; R22 N; R50/53
CIS-HEPTACHLOR EPOXIDE UNLABELED	(CAS No) 1024-57-3 (EC no) 213-831-0 (EC index no) 602-063-00-5	0.0000014	T+; R28 N; R50/53
OXYCHLORDANE UNLABELED	(CAS No) 27304-13-8	0.0000014	Carc.Cat.3; R40 T; R25 N; R50/53
2,4'-DDT UNLABELED (97% CHEMICAL PURITY)	(CAS No) 789-02-6 (EC no) 212-332-5	0.0000014	Carc.Cat.3; R40 T; R25 T; R48/25 N; R50/53
4,4'-DDE UNLABELED	(CAS No) 72-55-9 (EC no) 200-784-6	0.0000014	Carc.Cat.3; R40 Xn; R22 N; R50/53
DIELDRIN UNLABELED	(CAS No) 60-57-1 (EC no) 200-484-5 (EC index no) 602-049-00-9	0.0000014	T+; R26 T; R24 N; R51/53
MIREX UNLABELED	(CAS No) 2385-85-5 (EC no) 219-196-6 (EC index no) 602-077-00-1	0.0000014	Xn; R21/22 N; R50/53
4,4'-DDT UNLABELED	(CAS No) 50-29-3 (EC no) 200-024-3 (EC index no) 602-045-00-7	0.0000014	Carc.Cat.3; R40 T; R25 N; R50/53
DECHLORANE PLUS SYN UNLABELED	(CAS No) 135821-03-3	0.0000014	Xn; R20 N; R51/53
OXYCHLORDANE (13C10, 99%)	(CAS No) 27304-13-8 (Unlabeled)	0.0000014	Carc.Cat.3; R40 T; R25 N; R50/53
DECHLORANE PLUS ANTI UNLABELED	(CAS No) 135821-74-8	0.0000014	Xn; R20 N; R51/53

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.9997695	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
4,4'-DDE (RING-13C12, 99%)	(CAS No) 72-55-9 (Unlabeled) (EC no) 200-784-6	0.0000348	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
HEXACHLOROBENZENE (13C6, 99%)	(CAS No) 93952-14-8 (EC no) 204-273-9 (Unlabeled) (EC index no) 602-065-00-6	0.0000139	Carc. 1B, H350 STOT SE 1, H370 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410
DIELDRIN (13C12, 98-99%)	(CAS No) 60-57-1 (Unlabeled) (EC no) 200-484-5 (EC index no) 602-049-00-9	0.0000139	Acute Tox. 1 (Oral), H300 Acute Tox. 3 (Dermal), H311 Acute Tox. 1 (Inhalation:dust,mist), H330 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
TRANS-NONACHLOR (13C10, 98%)	(CAS No) 39765-80-5 (Unlabeled)	0.0000139	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
MIREX (13C10, 99%)	(CAS No) 2385-85-5 (Unlabeled) (EC no) 219-196-6 (EC index no) 602-077-00-1	0.0000139	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Carc. 2, H351 Repr. 2, H361 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
BETA-BHC (13C6, 99%)	(CAS No) 319-85-7 (Unlabeled) (EC no) 206-271-3 (EC index no) 602-042-00-0	0.0000139	Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Dermal), H312 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,4'-DDT (RING-13C12, 99%)	(CAS No) 789-02-6 (Unlabeled) (EC no) 212-332-5	0.0000139	Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
CIS-HEPTACHLOR EPOXIDE (13C10, 99%)	(CAS No) 1024-57-3 (Unlabeled) (EC no) 213-831-0 (EC index no) 602-063-00-5	0.0000139	Acute Tox. 2 (Oral), H300 Carc. 2, H351 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
4,4'-DDT (RING-13C12, 99%)	(CAS No) 104215-84-1 (EC no) 200-024-3 (EC index no) 602-045-00-7	0.0000139	Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Oral), H301 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 4, H413
2,2',3,3',4,5,5',6,6'-NONACB (PCB-208) (13C12, 99%)	(CAS No) 52663-77-1 (Unlabeled) (EC index no) 602-039-00-4	0.0000139	Carc. 1B, H350 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
LINDANE (13C6, 99%)	(CAS No) 58-89-9 (Unlabeled) (EC no) 200-401-2 (EC index no) 602-043-00-6	0.0000139	Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Lact., H362 STOT SE 2, H371 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%)	(CAS No) 93703-48-1 (Unlabeled)	0.0000104	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2,2',3,4,4',6-HEXABDE (BDE-139) (13C12, 99%)	(CAS No) 488710-25-4	0.0000104	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
1,2,3,4-TCDD (13C12, 99%)	(CAS No) 116865-58-8	0.0000035	Acute Tox. 1 (Dermal), H310 Muta. 2, H341 STOT SE 2, H371 Asp. Tox. 1, H304 Aquatic Chronic 4, H413
HEXACHLOROBENZENE UNLABELED	(CAS No) 118-74-1 (EC no) 204-273-9 (EC index no) 602-065-00-6	0.0000014	Carc. 1B, H350 STOT SE 1, H370 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
BETA-BHC UNLABELED	(CAS No) 319-85-7 (EC no) 206-271-3 (EC index no) 602-042-00-0	0.0000014	Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Dermal), H312 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
LINDANE UNLABELED	(CAS No) 58-89-9 (EC no) 200-401-2 (EC index no) 602-043-00-6	0.0000014	Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Dermal), H312 STOT RE 2, H373 Lact., H362 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
TRANS-NONACHLOR UNLABELED	(CAS No) 39765-80-5	0.0000014	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
CIS-HEPTACHLOR EPOXIDE UNLABELED	(CAS No) 1024-57-3 (EC no) 213-831-0 (EC index no) 602-063-00-5	0.0000014	Acute Tox. 2 (Oral), H300 Carc. 2, H351 STOT RE 2, H373 Aquatic Chronic 1, H410
OXYCHLORDANE UNLABELED	(CAS No) 27304-13-8	0.0000014	Acute Tox. 3 (Oral), H301 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,4'-DDT UNLABELED (97% CHEMICAL PURITY)	(CAS No) 789-02-6 (EC no) 212-332-5	0.0000014	Acute Tox. 3 (Oral), H301 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
4,4'-DDE UNLABELED	(CAS No) 72-55-9 (EC no) 200-784-6	0.0000014	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
DIELDRIN UNLABELED	(CAS No) 60-57-1 (EC no) 200-484-5 (EC index no) 602-049-00-9	0.0000014	Acute Tox. 1 (Oral), H300 Acute Tox. 3 (Dermal), H311 Acute Tox. 1 (Inhalation:dust,mist), H330 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400
MIREX UNLABELED	(CAS No) 2385-85-5 (EC no) 219-196-6 (EC index no) 602-077-00-1	0.0000014	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Carc. 2, H351 Repr. 2, H361 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410
4,4'-DDT UNLABELED	(CAS No) 50-29-3 (EC no) 200-024-3 (EC index no) 602-045-00-7	0.0000014	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Carc. 2, H351 STOT SE 1, H370 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410
DECHLORANE PLUS SYN UNLABELED	(CAS No) 135821-03-3	0.0000014	Acute Tox. 3 (Inhalation), H331
OXYCHLORDANE (13C10, 99%)	(CAS No) 27304-13-8 (Unlabeled)	0.0000014	Acute Tox. 4 (Oral), H302
DECHLORANE PLUS ANTI UNLABELED	(CAS No) 135821-74-8	0.0000014	Acute Tox. 3 (Inhalation), H331

Name	Product identifier	%	GHS-US classification
N-NONANE UNLABELED	(CAS No) 111-84-2	99.9997695	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
1,2,3,4-TCDD (13C12, 99%)	(CAS No) 116865-58-8	0.0000035	Acute Tox. 1 (Dermal), H310 Muta. 2, H341 STOT SE 2, H371 Asp. Tox. 1, H304

Full text of R-, H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Move out of dangerous area. Consult a physician and show this safety data sheet.

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).

First-aid measures after eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

First-aid measures after ingestion : Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries after inhalation : May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

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

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour.

Explosion hazard : May form flammable/explosive vapour-air mixture.

Reactivity : Vapors may form explosive mixture with air.

5.3. Advice for firefighters

Firefighting instructions : Use water spray to cool unopened containers.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

6.1.1. For non-emergency personnel

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

6.1.2. For emergency responders

Protective equipment : Avoid breathing dust, mist or spray.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : No naked lights. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid breathing dust, mist or spray. Use only outdoors or in a well-ventilated area.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.

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

Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.0000000000 ppm Central Nervous System impairment.

HEXACHLOROBENZENE UNLABELED (118-74-1)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	0.0000000000 mg/m³ Central Nervous System impairment. Porphyrin effects. Skin damage.

HEXACHLOROBENZENE (13C6, 99%) (93952-14-8)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	0.0000000000 mg/m³ Central Nervous System impairment. Porphyrin effects. Skin damage.

DIELDRIN (13C12, 98-99%) (60-57-1 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	0.2500000000 mg/m³ Liver damage. Central Nervous System convulsion. Danger of cutaneous absorption
USA OSHA	OSHA PEL (TWA) (mg/m3)	0.2500000000 mg/m³ Skin notation

DIELDRIN UNLABELED (60-57-1)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	0.2500000000 mg/m³ Liver damage. Central Nervous System convulsion. Danger of cutaneous absorption
USA OSHA	OSHA PEL (TWA) (mg/m3)	0.2500000000 mg/m³ Skin notation

4,4'-DDT UNLABELED (50-29-3)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	1.0000000000 mg/m³ Liver damage. Confirmed animal carcinogen with unknown relevance to humans.
USA OSHA	OSHA PEL (TWA) (mg/m3)	1.0000000000 mg/m³ Skin notation

N-NONANE UNLABELED (111-84-2)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.0000000000 ppm Central Nervous System impairment.

4,4'-DDT (RING-13C12, 99%) (104215-84-1)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	1.0000000000 mg/m³ Liver damage. Confirmed animal carcinogen with unknown relevance to humans.
USA OSHA	OSHA PEL (TWA) (mg/m3)	1.0000000000 mg/m³ Skin notation

LINDANE (13C6, 99%) (58-89-9 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³

8.2. Exposure controls

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

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.

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	: No data available
Freezing point	: -53 °C (- 63 °F) - lit
Boiling point	: 151 °C (304 °F) - lit
Flash point	: 31.0 °C (87.8 °F) - closed cup
Self ignition temperature	: 205 °C (401 °F)
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapour
Vapour pressure	: 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °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 %
Log Pow	: 5.65
Log Kow	: No data available
Viscosity, kinematic	: No data available
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

Vapors may form explosive mixture with air.

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

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

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)	
LC50 inhalation rat (mg/l)	23760 mg/m³ male - 4 h
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE (gases)	4500.000 ppmV/4h
ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h

HEXACHLOROBENZENE UNLABELED (118-74-1)	
LD50 oral rat	10000 mg/kg
LC50 inhalation rat (mg/l)	3600 mg/m³
	LD50 Inhilation Mouse 4,000 mg/m3
	LC50 Inhilation Rabbit 1,800 mg/m3
	LD50 Oral Mouse 4,000 mg/kg
	LD50 Oral rabbit 2,600 mg/kg

BETA-BHC UNLABELED (319-85-7)	
LD50 oral rat	6000 mg/kg
ATE (oral)	100.000 mg/kg bodyweight
ATE (dermal)	1100.000 mg/kg bodyweight

LINDANE UNLABELED (58-89-9)	
ATE (oral)	100.000 mg/kg bodyweight
ATE (dermal)	1100.000 mg/kg bodyweight
ATE (gases)	4500.000 ppmV/4h
ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h

TRANS-NONACHLOR UNLABELED (39765-80-5)	
LD50 oral rat	500 mg/kg
ATE (oral)	500.000 mg/kg bodyweight

CIS-HEPTACHLOR EPOXIDE UNLABELED (1024-57-3)	
LD50 oral rat	15 mg/kg
ATE (oral)	15.000 mg/kg bodyweight
	LD50 Oral Mouse 39 mg/kg
	LD50 Oral Rabbit 144 mg/kg

OXYCHLORDANE UNLABELED (27304-13-8)	
LD50 oral rat	457 mg/kg
ATE (oral)	100.000 mg/kg bodyweight

HEXACHLOROBENZENE (13C6, 99%) (93952-14-8)	
LD50 oral rat	10000 mg/kg
LC50 inhalation rat (mg/l)	3600 mg/m³

DIELDRIN (13C12, 98-99%) (60-57-1 (Unlabeled))	
LD50 dermal rabbit	250.0 mg/kg
LC50 inhalation rat (mg/l)	13 mg/m³ 4 h
ATE (oral)	0.500 mg/kg bodyweight
ATE (dermal)	250.000 mg/kg bodyweight
ATE (vapours)	0.013 mg/l/4h
ATE (dust,mist)	0.013 mg/l/4h

2,4'-DDT UNLABELED (97% CHEMICAL PURITY) (789-02-6)	
ATE (oral)	100.000 mg/kg bodyweight

4,4'-DDE UNLABELED (72-55-9)	
LD50 oral rat	880 mg/kg
ATE (oral)	880.000 mg/kg bodyweight

DIELDRIN UNLABELED (60-57-1)	
LD50 dermal rabbit	250.0 mg/kg
LC50 inhalation rat (mg/l)	13 mg/m³ 4 h
ATE (oral)	0.500 mg/kg bodyweight
ATE (dermal)	250.000 mg/kg bodyweight
ATE (vapours)	0.013 mg/l/4h
ATE (dust,mist)	0.013 mg/l/4h
	LD50 oral mouse 38.0 mg/kg
	LD50 oral rabbit 45.0 mg/kg

MIREX UNLABELED (2385-85-5)	
LD50 oral rat	235 mg/kg
ATE (oral)	235.000 mg/kg bodyweight
ATE (dermal)	300.000 mg/kg bodyweight

4,4'-DDT UNLABELED (50-29-3)	
LD50 oral rat	87 mg/kg
LD50 dermal rabbit	300 mg/kg
ATE (oral)	87.000 mg/kg bodyweight
ATE (dermal)	300.000 mg/kg bodyweight

N-NONANE UNLABELED (111-84-2)	
LC50 inhalation rat (mg/l)	23760 mg/m³ male - 4 h
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE (gases)	3200.000 ppmV/4h
ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	23.760 mg/l/4h

OXYCHLORDANE (13C10, 99%) (27304-13-8 (Unlabeled))	
LD50 oral rat	457 mg/kg
ATE (oral)	457.000 mg/kg bodyweight

TRANS-NONACHLOR (13C10, 98%) (39765-80-5 (Unlabeled))	
LD50 oral rat	500 mg/kg
ATE (oral)	500.000 mg/kg bodyweight

MIREX (13C10, 99%) (2385-85-5 (Unlabeled))	
LD50 oral rat	235 mg/kg
LD50 dermal rabbit	800 mg/kg
ATE (oral)	235.000 mg/kg bodyweight
ATE (dermal)	300.000 mg/kg bodyweight

4,4'-DDE (RING-13C12, 99%) (72-55-9 (Unlabeled))	
LD50 oral rat	880 mg/kg
ATE (oral)	880.000 mg/kg bodyweight

BETA-BHC (13C6, 99%) (319-85-7 (Unlabeled))	
LD50 oral rat	6000 mg/kg
ATE (oral)	100.000 mg/kg bodyweight
ATE (dermal)	1100.000 mg/kg bodyweight

2,4'-DDT (RING-13C12, 99%) (789-02-6 (Unlabeled))	
ATE (oral)	100.000 mg/kg bodyweight

CIS-HEPTACHLOR EPOXIDE (13C10, 99%) (1024-57-3 (Unlabeled))	
LD50 oral rat	15 mg/kg
ATE (oral)	15.000 mg/kg bodyweight
ATE (dermal)	300.000 mg/kg bodyweight

CIS-HEPTACHLOR EPOXIDE (13C10, 99%) (1024-57-3 (Unlabeled))	
ATE (dust,mist)	0.050 mg/l/4h

4,4'-DDT (RING-13C12, 99%) (104215-84-1)	
LD50 oral rat	87 mg/kg
LD50 dermal rabbit	300 mg/kg

LINDANE (13C6, 99%) (58-89-9 (Unlabeled))	
ATE (oral)	100.000 mg/kg bodyweight
ATE (dermal)	1100.000 mg/kg bodyweight
ATE (gases)	4500.000 ppmV/4h
ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h

DECHLORANE PLUS ANTI UNLABELED (135821-74-8)	
ATE (gases)	700.000 ppmV/4h
ATE (vapours)	3.000 mg/l/4h
ATE (dust,mist)	0.500 mg/l/4h

1,2,3,4-TCDD (13C12, 99%) (116865-58-8)	
LD50 oral	0.013 mg/kg
LD50 dermal	0.275 mg/kg
ATE (dermal)	5.000 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.
Skin - rat - Skin irritation - Draize test

Serious eye damage/irritation : Causes serious eye irritation.
No data available

Respiratory or skin sensitisation : Not available
No data available

Germ cell mutagenicity : Not available

Carcinogenicity : Not classified

Reproductive toxicity : Not available

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

Specific target organ toxicity (repeated exposure) : Not classified
No data available

Aspiration hazard : May be fatal if swallowed and enters airways.

Potential Adverse human health effects and symptoms : The chemical, physical, and toxicological properties have not been thoroughly investigated.

Symptoms/injuries after inhalation : May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

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

SECTION 12: Ecological information

12.1. Toxicity

HEXACHLOROBENZENE UNLABELED (118-74-1)	
LC50 fishes 1	7.6 mg/l Lepomis macrochirus (Bluegill) -96h
EC50 Daphnia 1	> 0.005 mg/l Daphnia magna (Water flea) -48h
NOEC (chronic)	> 0.0048 mg/l Pimephales promelas (fathead minnow) -96h

BETA-BHC UNLABELED (319-85-7)	
LC50 fishes 1	1.6 mg/l Poecilia reticulata (guppy) -96h

LINDANE UNLABELED (58-89-9)	
LC50 fishes 1	0.2 mg/l Cyprinus carpio (Carp) - 96 h
EC50 Daphnia 1	0.8 - 6.5 mg/l Daphnia magna (Water flea) - 48 h
ErC50 (algae)	4 mg/l 72 h
NOEC chronic fish	0.056 mg/l Oncorhynchus mykiss (rainbow trout) - 3 d

TRANS-NONACHLOR UNLABELED (39765-80-5)	
EC50 Daphnia 1	0.022 mg/l Daphnia pulex (Water flea) - 48 h

CIS-HEPTACHLOR EPOXIDE UNLABELED (1024-57-3)	
LC50 fishes 1	0.02 mg/l Oncorhynchus mykiss (rainbow trout) -96h
EC50 Daphnia 1	0.24 mg/l Daphnia magna (Water flea) -48h

HEXACHLOROBENZENE (13C6, 99%) (93952-14-8)	
LC50 fishes 1	7.6 mg/l Lepomis macrochirus (Bluegill) - 96 h
EC50 Daphnia 1	0.0048 mg/l Daphnia magna (Water flea) - 48 h
NOEC (chronic)	0.005 mg/l Pimephales promelas (fathead minnow) - 96 h

DIELDRIN (13C12, 98-99%) (60-57-1 (Unlabeled))	
LC50 fishes 1	1.6 mg/l Carassius auratus (goldfish) - 96 h
EC50 Daphnia 1	79.5 mg/l Daphnia magna (Water flea) - 48 h

2,4'-DDT UNLABELED (97% CHEMICAL PURITY) (789-02-6)	
LC50 fishes 1	0.03 mg/l Other fish - 24 h

4,4'-DDE UNLABELED (72-55-9)	
LC50 fishes 1	0.2 - 0.3 mg/l Lepomis macrochirus (Bluegill) - 96 h
LC50 fish 2	0.03 - 0.04 mg/l Onchorhynchus mykiss (Rainbow Trout) - 96 h
LC50 other aquatic organisms 2	0.05 - 0.18 mg/l Salmo salar (Atlantic Salmon) - 96 h

DIELDRIN UNLABELED (60-57-1)	
LC50 fishes 1	1.6 mg/l Carassius auratus (goldfish) -96h
EC50 Daphnia 1	79.5 mg/l Daphnia magna (Water flea) -48h

MIREX UNLABELED (2385-85-5)	
LC50 fishes 1	0.023 mg/l Oncorhynchus mykiss (rainbow trout) -96h
EC50 Daphnia 1	2.6 mg/l Daphnia magna (Water flea) -2.6mg/L-48h

4,4'-DDT UNLABELED (50-29-3)	
LC50 fishes 1	0.01 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 Daphnia 1	0.00108 mg/l Daphnia magna (Water flea) - 48 h
ErC50 (algae)	> 20 mg/l Scenedesmus quadricauda (Green Algae) - 7 d
ErC50 (other aquatic plants)	113 mg/l Oncorhynchus mykiss (rainbow trout) - 3 d
NOEC (chronic)	113 mg/l Oncorhynchus mykiss (rainbow trout) - 3 d

TRANS-NONACHLOR (13C10, 98%) (39765-80-5 (Unlabeled))	
EC50 Daphnia 1	0.022 mg/l Daphnia pulex (Water flea) - 48 h

MIREX (13C10, 99%) (2385-85-5 (Unlabeled))	
LC50 fishes 1	0.023 mg/l Oncorhynchus mykiss (rainbow trout) - 96 h
EC50 Daphnia 1	2.6 mg/l Daphnia magna (Water flea) - 48 h

4,4'-DDE (RING-13C12, 99%) (72-55-9 (Unlabeled))	
LC50 fishes 1	0.2 - 0.3 mg/l Lepomis macrochirus (Bluegill) - 96 h

BETA-BHC (13C6, 99%) (319-85-7 (Unlabeled))	
LC50 fishes 1	1.6 mg/l Poecilia reticulata (guppy) - 96 h

2,4'-DDT (RING-13C12, 99%) (789-02-6 (Unlabeled))	
LC50 fishes 1	0.03 mg/l Other fish - 24 h

CIS-HEPTACHLOR EPOXIDE (13C10, 99%) (1024-57-3 (Unlabeled))	
LC50 fishes 1	0.02 mg/l Oncorhynchus mykiss (rainbow trout) - 96 h
EC50 Daphnia 1	0.24 mg/l Daphnia magna (Water flea) - 48 h

4,4'-DDT (RING-13C12, 99%) (104215-84-1)	
LC50 fishes 1	0.01 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 Daphnia 1	0.00108 mg/l Daphnia magna (Water flea) - 48 h
NOEC (chronic)	113 mg/l Oncorhynchus mykiss (rainbow trout) - 3 d

LINDANE (13C6, 99%) (58-89-9 (Unlabeled))	
LC50 fishes 1	0.2 mg/l Cyprinus carpio (Carp) - 96 h
EC50 Daphnia 1	0.8 - 6.5 mg/l Daphnia magna (Water flea) - 48 h

LINDANE (13C6, 99%) (58-89-9 (Unlabeled))	
ErC50 (algae)	4 mg/l 72 h
NOEC chronic fish	0.056 mg/l Oncorhynchus mykiss (rainbow trout) - 3 d

12.2. Persistence and degradability

HEXACHLOROBENZENE (13C6, 99%) (93952-14-8)	
Persistence and degradability	Not available.

DECHLORANE PLUS SYN UNLABELED (135821-03-3)	
Persistence and degradability	Not available.

3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%) (93703-48-1 (Unlabeled))	
Persistence and degradability	Not available.

2,2',3,4,4',6-HEXABDE (BDE-139) (13C12, 99%) (488710-25-4)	
Persistence and degradability	Not available.

LINDANE (13C6, 99%) (58-89-9 (Unlabeled))	
Persistence and degradability	May cause long-term adverse effects in the environment.

DECHLORANE PLUS ANTI UNLABELED (135821-74-8)	
Persistence and degradability	Not available.

1,2,3,4-TCDD (13C12, 99%) (116865-58-8)	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.

HEXACHLOROBENZENE UNLABELED (118-74-1)	
Bioconcentration factor (BCF REACH)	22000
Bioaccumulative potential	Bioaccumulative potential: Pimephales promelas (fathead minnow)- 32d.

BETA-BHC UNLABELED (319-85-7)	
Bioconcentration factor (BCF REACH)	500
Log Pow	3.78
Bioaccumulative potential	Bioaccumulative potential Cyprinus carpio (Carp)-35d-0.05 mg/l.

TRANS-NONACHLOR UNLABELED (39765-80-5)	
Log Pow	6.35

CIS-HEPTACHLOR EPOXIDE UNLABELED (1024-57-3)	
Bioconcentration factor (BCF REACH)	14400
Log Pow	5.40
Bioaccumulative potential	Bioaccumulative potential: Pimephales promelas (fathead minnow)- 32d.

2,4'-DDT UNLABELED (97% CHEMICAL PURITY) (789-02-6)	
Bioconcentration factor (BCF REACH)	37000 Pimephales promelas (fathead minnow) - 32 d

4,4'-DDE UNLABELED (72-55-9)	
BCF fish 1	0.00384 mg/l Gambusia affinis (Mosquito Fish) - 33 d
Bioconcentration factor (BCF REACH)	12037
Log Pow	6.51

MIREX UNLABELED (2385-85-5)	
Bioconcentration factor (BCF REACH)	18100
Log Pow	5.28
Bioaccumulative potential	Bioaccumulative potential: Pimephales promelas (fathead minnow)- 32d.

4,4'-DDT UNLABELED (50-29-3)	
BCF fish 1	Oncorhynchus mykiss (rainbow trout) - 20 d
Bioconcentration factor (BCF REACH)	46670
Log Pow	6.91

DECHLORANE PLUS SYN UNLABELED (135821-03-3)	
Bioaccumulative potential	Not available.

N-NONANE UNLABELED (111-84-2)	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.

TRANS-NONACHLOR (13C10, 98%) (39765-80-5 (Unlabeled))	
Log Pow	6.35

MIREX (13C10, 99%) (2385-85-5 (Unlabeled))	
BCF fish 1	0.0012 mg/l Pimephales promelas (rainbow trout) - 32 d
Bioconcentration factor (BCF REACH)	18100
Log Pow	5.28

4,4'-DDE (RING-13C12, 99%) (72-55-9 (Unlabeled))	
Log Pow	6.51

BETA-BHC (13C6, 99%) (319-85-7 (Unlabeled))	
Log Pow	3.78

CIS-HEPTACHLOR EPOXIDE (13C10, 99%) (1024-57-3 (Unlabeled))	
Log Pow	5.40

4,4'-DDT (RING-13C12, 99%) (104215-84-1)	
Log Pow	6.91

3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%) (93703-48-1 (Unlabeled))	
Bioaccumulative potential	Not available.

2,2',3,4,4',6-HEXABDE (BDE-139) (13C12, 99%) (488710-25-4)	
Bioaccumulative potential	Not available.

LINDANE (13C6, 99%) (58-89-9 (Unlabeled))	
BCF fish 1	0.0091 mg/l Bioaccumulation Pimephales promels (fathead minnow) - 304 d
Bioconcentration factor (BCF REACH)	674
Log Pow	3.5 at 22 °C (72 °F)

DECHLORANE PLUS ANTI UNLABELED (135821-74-8)	
Bioaccumulative potential	Not available.

12.4. Mobility in soil

HEXACHLOROBENZENE (13C6, 99%) (93952-14-8)	
Ecology - soil	Not available.

DECHLORANE PLUS SYN UNLABELED (135821-03-3)	
Ecology - soil	Not available.

3,3',4,4'-TETRABDE (BDE-77) (13C12, 99%) (93703-48-1 (Unlabeled))	
Ecology - soil	Not available.

2,2',3,4,4',6-HEXABDE (BDE-139) (13C12, 99%) (488710-25-4)	
Ecology - soil	Not available.

DECHLORANE PLUS ANTI UNLABELED (135821-74-8)	
Ecology - soil	Not available.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information	:	Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	:	Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

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

14.2. UN proper shipping name

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

Packing group (DOT)	:	III - Minor Danger
DOT Special Provisions (49 CFR 172.102)	:	B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	150
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	242

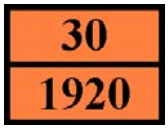
14.3. Additional information

Other information	:	No supplementary information available.

Overland transport

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

Orange plates	:	



Tunnel restriction code	:	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(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

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

PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

N-NONANE UNLABELED (111-84-2)	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

1,2,3,4-TCDD (13C12, 99%) (116865-58-8)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)
Listed on the Canadian DSL (Domestic Sustances List) inventory.

15.2.1. National regulations

No additional information available

15.3. US State regulations

PERSISTENT PESTICIDE CALIBRATION SOLUTION CS3 (UNLABELED/13C, 99%)()	
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

N-NONANE UNLABELED (111-84-2)
U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

1,2,3,4-TCDD (13C12, 99%) (116865-58-8)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

1,2,3,4-TCDD (13C12, 99%) (116865-58-8)
WARNING! This product contains a chemical known by the state of California to cause birth defects or other reproductive harm.

SECTION 16: Other information

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

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

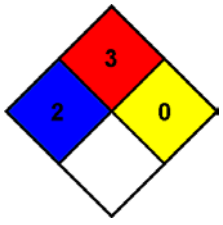
Acute Tox. 1 (Dermal)	Acute toxicity (dermal), Category 1
Acute Tox. 1	Acute toxicity (inhalation:dust,mist) Category 1
Acute Tox. 1 (Oral)	Acute toxicity (oral), Category 1
Acute Tox. 2 (Oral)	Acute toxicity (oral), Category 2
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation:vapour) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — AcuteHazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 4	Hazardous to the aquatic environment — Chronic Hazard, Category 4
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Carc. 1B	Carcinogenicity, Category 1B
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Lact.	Reproductive toxicity, Additional category, Effects on or via lactation
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 1	Specific target organ toxicity — single exposure, Category 1
STOT SE 2	Specific target organ toxicity — Single exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H226	Flammable liquid and vapour
H300	Fatal if swallowed
H301	Toxic if swallowed
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H330	Fatal if inhaled
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H341	Suspected of causing genetic defects
H350	May cause cancer

H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H362	May cause harm to breast-fed children
H370	Causes damage to organs
H371	May cause damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life
R10	Flammable
R20	Harmful by inhalation
R20/21	Harmful by inhalation and in contact with skin
R21	Harmful in contact with skin
R21/22	Harmful in contact with skin and if swallowed
R22	Harmful if swallowed
R24	Toxic in contact with skin
R24/25	Toxic in contact with skin and if swallowed
R25	Toxic if swallowed
R26	Very toxic by inhalation
R27	Very toxic in contact with skin
R28	Very toxic if swallowed
R33	Danger of cumulative effects
R36/37/38	Irritating to eyes, respiratory system and skin
R37	Irritating to respiratory system
R38	Irritating to skin
R40	Limited evidence of a carcinogenic effect
R41	Risk of serious damage to eyes
R45	May cause cancer
R48	Danger of serious damage to health by prolonged exposure
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R49	May cause cancer by inhalation
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R53	May cause long-term adverse effects in the aquatic environment
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
R64	May cause harm to breastfed babies
R65	Harmful: may cause lung damage if swallowed
R67	Vapours may cause drowsiness and dizziness
R68	Possible risk of irreversible effects
N	Dangerous for the environment
T	Toxic
T+	Very toxic
Xi	Irritant
Xn	Harmful

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

NFPA fire hazard : 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 3 Serious Hazard

Physical	: 0 Minimal Hazard

CIL Mixture SDS

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