



NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE

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: 14/04/2015

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Version: 1.0

ES-5406

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

1.1. Product identifier

Product form : Mixture
Product name : NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE
Product code : ES-5406

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.
Industrial.

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. 2	H225
Acute Tox. 4 (Inhalation)	H332
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Carc. 2	H351
Repr. 2	H361
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304
Aquatic Acute 1	H400
Aquatic Chronic 3	H412

Full text of H-phrases: see section 16

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

Carc.Cat.1; R45
Carc.Cat.1; R49
Carc.Cat.3; R40
Repr.Cat.3; R62
Repr.Cat.3; R63
F; R11
Xn; R20
Xn; R65
Xi; R36/38
R52/53

Full text of R-phrases: see section 16

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GHS-US classification

Flam. Liq. 2	H225
Acute Tox. 4 (Inhalation)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Carc. 2	H351
Repr. 2	H361
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304
Aquatic Acute 1	H400
Aquatic Chronic 3	H412

Adverse physicochemical, human health and environmental effects

Bladder, Liver, Kidney, Brain.

2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazardous ingredients

: TOLUENE UNLABELED

Hazard statements (CLP)

: H225 - Highly 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
H351 - Suspected of causing cancer
H361 - Suspected of damaging fertility. Suspected of damaging the unborn child
H373 - May cause damage to organs (liver, kidneys, brain, urinary organs) through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P260 - Do not breathe dust, fume, gas, mist, spray, vapours
P264 - Wash Both hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment

GHS-US labelling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H225 - Highly 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
H351 - Suspected of causing cancer (Dermal, Inhalation, oral)
H361 - (Dermal, Inhalation, oral)
H373 - May cause damage to organs (liver, kidneys, brain, urinary bladder) through prolonged or

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Precautionary statements (GHS-US)	repeated exposure (Dermal, Inhalation, oral) H400 - Very toxic to aquatic life H412 - Harmful to aquatic life with long lasting effects
	: P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking P233 - Keep container tightly closed P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical, lighting, ventilating equipment P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P260 - Do not breathe dust, fume, gas, mist, spray, vapours 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 P273 - Avoid release to the environment P280 - Wear 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 P308+P313 - IF exposed or concerned: Get medical advice/attention P312 - Call a POISON CENTER/doctor/physician if you feel unwell P314 - Get medical advice and attention 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 P391 - Collect spillage P403+P233 - Store in a well-ventilated place. Keep container tightly closed P403+P235 - Store in a well-ventilated place. Keep cool P405 - Store locked up P501 - Dispose of contents/container to 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
TOLUENE UNLABELED	(CAS No) 108-88-3 (EC no) 203-625-9 (EC index no) 601-021-00-3	99.652	Repr.Cat.3; R62 Repr.Cat.3; R63 F; R11 Xi; R36/38 Carc.Cat.3; R40 Xn; R20 R67 Xn; R65
CHLOROBENZENE UNLABELED	(CAS No) 108-90-7 (EC no) 203-628-5 (EC index no) 602-033-00-1	0.058	Carc.Cat.3; R40 T; R39/23/24/25 Xn; R20/22 N; R51/53 R10
1,4-DICHLOROBENZENE UNLABELED	(CAS No) 106-46-7 (Unlabeled) (EC no) 203-400-5 (EC index no) 602-035-00-2	0.058	Carc.Cat.3; R40 Xi; R36 N; R50/53
PENTACHLOROBENZENE UNLABELED	(CAS No) 608-93-5 (Unlabeled) (EC no) 210-172-0 (EC index no) 602-074-00-5	0.058	Xn; R22 N; R50/53

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Name	Product identifier	%	Classification according to Directive 67/548/EEC
HEXACHLOROBENZENE UNLABELED	(CAS No) 118-74-1 (Unlabeled) (EC no) 204-273-9 (EC index no) 602-065-00-6	0.058	Xn; R20 N; R51/53
1,2,3-TRICHLOROBENZENE UNLABELED	(CAS No) 87-61-6 (Unlabeled) (EC no) 201-757-1	0.058	Xn; R22 Xi; R36/37/38 N; R51/53
1,2,3,4-TETRACHLOROBENZENE UNLABELED	(CAS No) 634-66-2 (Unlabeled)	0.058	Xn; R22 N; R50/53

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
TOLUENE UNLABELED	(CAS No) 108-88-3 (EC no) 203-625-9 (EC index no) 601-021-00-3	99.652	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 Repr. 2, H361d STOT SE 3, H336 STOT SE 2, H371 STOT RE 2, H373 Asp. Tox. 1, H304
CHLOROBENZENE UNLABELED	(CAS No) 108-90-7 (EC no) 203-628-5 (EC index no) 602-033-00-1	0.058	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 Carc. 2, H351 STOT SE 1, H370 Aquatic Chronic 2, H411
1,4-DICHLOROBENZENE UNLABELED	(CAS No) 106-46-7 (Unlabeled) (EC no) 203-400-5 (EC index no) 602-035-00-2	0.058	Eye Irrit. 2, H319 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
PENTACHLOROBENZENE UNLABELED	(CAS No) 608-93-5 (Unlabeled) (EC no) 210-172-0 (EC index no) 602-074-00-5	0.058	Flam. Sol. 1, H228 Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
HEXACHLOROBENZENE UNLABELED	(CAS No) 118-74-1 (Unlabeled) (EC no) 204-273-9 (EC index no) 602-065-00-6	0.058	Carc. 1B, H350 STOT SE 1, H370 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
1,2,3-TRICHLOROBENZENE UNLABELED	(CAS No) 87-61-6 (Unlabeled) (EC no) 201-757-1	0.058	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Aquatic Chronic 2, H411
1,2,3,4-TETRACHLOROBENZENE UNLABELED	(CAS No) 634-66-2 (Unlabeled)	0.058	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Name	Product identifier	%	GHS-US classification
TOLUENE UNLABELED	(CAS No) 108-88-3	99.652	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Carc. 2, H351 Repr. 2, H361 STOT SE 3, H336 STOT SE 2, H371 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401

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 : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
- 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.

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First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Gently wash with plenty of soap and water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Immediately flush eyes thoroughly with water for at least 15 minutes. Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/injuries	: Causes damage to organs (kidneys, liver, brain, urinary bladder) (Inhalation, dermal, oral). Suspected of damaging fertility.
Symptoms/injuries after inhalation	: May cause cancer by inhalation. May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

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	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly 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 or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
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.
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6.1.1. For non-emergency personnel

Emergency procedures	: Evacuate unnecessary personnel.
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6.1.2. For emergency responders

Protective equipment	: Avoid breathing dust, mist or spray.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
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6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

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	: Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No naked lights. No smoking. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid breathing dust, mist or spray.
Hygiene measures	: Wash Both hands thoroughly after handling.

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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 products	: Strong bases. strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CHLOROBENZENE UNLABELED (108-90-7)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10.0000000000 ppm Liver damage. Confirmed animal carcinogen with unknwn relevance to humans.
USA OSHA	OSHA PEL (TWA) (ppm)	75.0000000000 ppm
1,4-DICHLOROBENZENE UNLABELED (106-46-7 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	10.0000000000 ppm Eye irritation. Kidney damage. Confirmed animal carcinogen.
USA OSHA	OSHA PEL (TWA) (ppm)	75.0000000000 ppm
USA OSHA	OSHA PEL (STEL) (ppm)	110.0000000000 ppm
HEXACHLOROBENZENE UNLABELED (118-74-1 (Unlabeled))		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0.0000000000 mg/m ³ Central Nervous System impairment. Porphyrin effects. Skin damage.
TOLUENE UNLABELED (108-88-3)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	20.0000000000 ppm Visual impairment, Female reproductive, Pregnancy loss
USA OSHA	OSHA PEL (TWA) (ppm)	100.0000000000 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
USA OSHA	OSHA PEL (STEL) (ppm)	150.0000000000 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.
Other information	: When using, do not eat, drink or smoke.

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	: 92.14 g/mol
Colour	: Colourless.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available

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Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -93 °C (-135 °F)
Freezing point	: No data available
Boiling point	: 110 - 111 °C (230 - 232 °F)
Flash point	: 4.0 °C (39.2 °F) - closed cup
Self ignition temperature	: 535 °C (995 °F)
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapour
Vapour pressure	: 29.1 hPa (21.8 mmHg) at 20.0 °C (68.0 °F)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.865 g/ml at 25 °C (77 °F)
Solubility	: No data available
Log Pow	: No data available
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	: 1.2 - 7 % (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

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if inhaled.

NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE	
LD50 oral rat	> 5580 mg/kg
LD50 dermal rabbit	12196 mg/kg
LC50 inhalation rat (mg/l)	12500 - 28800 mg/m ³ - 4 h
ATE (dermal)	12196.000 mg/kg bodyweight
ATE (gases)	4500.000 ppmV/4h
ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h

CHLOROBENZENE UNLABELED (108-90-7)	
LD50 oral rat	1110 mg/kg
LC50 inhalation rat (ppm)	2965 ppm
ATE (oral)	1110.000 mg/kg bodyweight
ATE (dust,mist)	1.500 mg/l/4h

1,4-DICHLOROBENZENE UNLABELED (106-46-7 (Unlabeled))	
LD50 oral rat	> 2000 mg/kg

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1,4-DICHLOROBENZENE UNLABELED (106-46-7 (Unlabeled))	
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> ≥ 5.07 mg/l
ATE (vapours)	5.070 mg/l/4h
ATE (dust,mist)	5.070 mg/l/4h

PENTACHLOROBENZENE UNLABELED (608-93-5 (Unlabeled))	
LD50 oral rat	1080 mg/kg
ATE (oral)	1080.000 mg/kg bodyweight

HEXACHLOROBENZENE UNLABELED (118-74-1 (Unlabeled))	
LD50 oral rat	10000 mg/kg
LC50 inhalation rat (mg/l)	3600 mg/m ³
	LD50 Inhalation Mouse 4,000 mg/m ³
	LC50 Inhalation Rabbit 1,800 mg/m ³
	LD50 Oral Mouse 4,000 mg/kg
	LD50 Oral rabbit 2,600 mg/kg

1,2,3-TRICHLOROBENZENE UNLABELED (87-61-6 (Unlabeled))	
LD50 oral rat	1830 mg/kg

1,2,3,4-TETRACHLOROBENZENE UNLABELED (634-66-2 (Unlabeled))	
LD50 oral rat	1167 mg/kg
ATE (oral)	1167.000 mg/kg bodyweight

TOLUENE UNLABELED (108-88-3)	
LD50 oral rat	> 5580 mg/kg
LD50 dermal rabbit	12196 mg/kg
LC50 inhalation rat (mg/l)	12500 - 28800 mg/m ³ 4 h
ATE (dermal)	12196.000 mg/kg bodyweight
ATE (gases)	4500.000 ppmV/4h
ATE (vapours)	12.500 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation. Skin - rabbit - Skin irritation - 24 h
Serious eye damage/irritation	: Causes serious eye irritation. No data available
Respiratory or skin sensitisation	: Not available Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Suspected of causing cancer.
Reproductive toxicity	: Experiments have shown reproductive toxicity effects in male and female laboratory animals.
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness. No data available
Specific target organ toxicity (repeated exposure)	: May cause damage to organs (liver, kidneys, brain, urinary organs) through prolonged or repeated exposure. No data available
Aspiration hazard	: May be fatal if swallowed and enters airways. Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
IARC group	: 3
Symptoms/injuries after inhalation	: May cause cancer by inhalation. May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.

NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE	
LC50 fishes 1	74 - 340 mg/l <i>Lepomis macrochirus</i> (Bluegill) - 96h
LC50 other aquatic organisms 1	10 mg/l <i>Pseudokirchneriella subcapitata</i> (Green algae) - 24 h
EC50 Daphnia 1	8 mg/l <i>Daphnia magna</i> (Water flea) - 24h
LC50 fish 2	7.63 mg/l <i>Oncorhynchus mykiss</i> (Rainbow trout) - 96 h
EC50 Daphnia 2	6 mg/l <i>Daphnia magna</i> (Water flea) - Immobilization - 48 h
ErC50 (algae)	245 mg/l <i>Chlorella vulgaris</i> (Fresh water algae) - 24 h
LOEC (chronic)	8.04 mg/l <i>Pimephales promelas</i> (Fathead minnow) - 7 d
NOEC (chronic)	5.44 mg/l <i>Pimephales promelas</i> (fathead minnow) - 7 d

CHLOROBENZENE UNLABELED (108-90-7)	
LC50 fishes 1	10 mg/l <i>Cyprinodon variegatus</i> (sheepshead minnow) - 96 h
EC50 Daphnia 1	4.3 - 16 mg/l <i>Daphnia magna</i> (Water flea) - 24 h
ErC50 (algae)	12.5 mg/l <i>Pseudokirchneriella subcapitata</i> (Green algae) - 96 h
NOEC (chronic)	6.2 mg/l <i>Cyprinodon variegatus</i> (Sheepshead minnow) - 96 h

1,4-DICHLOROBENZENE UNLABELED (106-46-7 (Unlabeled))	
LC50 fishes 1	2.1 mg/l <i>Danio rerio</i> (Zebra fish) - 96 h
EC50 Daphnia 1	0.70 mg/l <i>Daphnia magna</i> (Water flea) - 48 h

PENTACHLOROBENZENE UNLABELED (608-93-5 (Unlabeled))	
LC50 fishes 1	0.247 mg/l <i>Pimephales promelas</i> (fathead minnow) -96h

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

1,2,3-TRICHLOROBENZENE UNLABELED (87-61-6 (Unlabeled))	
LC50 fishes 1	2.2 mg/l <i>Gambusia affinis</i> (Mosquito fish) - 96 h
EC50 Daphnia 1	1.45 mg/l <i>Daphnia magna</i> (Water flea) - 48 h

1,2,3,4-TETRACHLOROBENZENE UNLABELED (634-66-2 (Unlabeled))	
LC50 fishes 1	1.1 mg/l <i>Pimephales promelas</i> (Fathead minnow) - 96 h
EC50 Daphnia 1	0.13 mg/l <i>Daphnia</i> -48 h

TOLUENE UNLABELED (108-88-3)	
LC50 fishes 1	74 - 340 mg/l <i>Lepomis macrochirus</i> (Bluegill) - 96h
LC50 other aquatic organisms 1	10 mg/l <i>Pseudokirchneriella subcapitata</i> (Green algae) - 24 h
EC50 Daphnia 1	8 mg/l <i>Daphnia magna</i> (Water flea) - 24h
LC50 fish 2	7.63 mg/l <i>Oncorhynchus mykiss</i> (Rainbow trout) - 96 h
EC50 Daphnia 2	6 mg/l <i>Daphnia magna</i> (Water flea) - Immobilization - 48 h
ErC50 (algae)	245 mg/l <i>Chlorella vulgaris</i> (Fresh water algae) - 24 h
LOEC (chronic)	8.04 mg/l <i>Pimephales promelas</i> (Fathead minnow) - 7 d
NOEC (chronic)	5.44 mg/l <i>Pimephales promelas</i> (fathead minnow) - 7 d

12.2. Persistence and degradability

NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE	
Persistence and degradability	May cause long-term adverse effects in the environment.

1,2,3-TRICHLOROBENZENE UNLABELED (87-61-6 (Unlabeled))	
Persistence and degradability	Not available.

1,2,3,4-TETRACHLOROBENZENE UNLABELED (634-66-2 (Unlabeled))	
Persistence and degradability	Not available.

12.3. Bioaccumulative potential

NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE	
Bioaccumulative potential	Not established.

NATIVE MONO-HEXA CHLOROBENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE ES-5406

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CHLOROBENZENE UNLABELED (108-90-7)	
Log Pow	2.89
1,4-DICHLOROBENZENE UNLABELED (106-46-7 (Unlabeled))	
Log Pow	3.40
PENTACHLOROBENZENE UNLABELED (608-93-5 (Unlabeled))	
Bioaccumulative potential	Pimephales promelas (fathead minnow)-31d.
HEXACHLOROBENZENE UNLABELED (118-74-1 (Unlabeled))	
Bioconcentration factor (BCF REACH)	22000
Bioaccumulative potential	Bioaccumulative potential: Pimephales promelas (fathead minnow)- 32d.
1,2,3-TRICHLOROBENZENE UNLABELED (87-61-6 (Unlabeled))	
Log Pow	4.016

12.4. Mobility in soil

CHLOROBENZENE UNLABELED (108-90-7)	
Ecology - soil	Not available.
1,4-DICHLOROBENZENE UNLABELED (106-46-7 (Unlabeled))	
Ecology - soil	Not available.
1,2,3-TRICHLOROBENZENE UNLABELED (87-61-6 (Unlabeled))	
Ecology - soil	Not available.
1,2,3,4-TETRACHLOROBENZENE UNLABELED (634-66-2 (Unlabeled))	
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.
Toxic to aquatic life.

Other information : Avoid release to the 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. Dispose of contents/container to Comply with applicable regulations.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

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

14.1. UN number

UN-No.(DOT) : 1294
DOT NA no. UN1294

14.2. UN proper shipping name

DOT Proper Shipping Name : Toluene
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) : II - Medium Danger

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DOT Special Provisions (49 CFR 172.102)	:	IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). 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. T4 - 2.65 178.274(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)	:	202
DOT Packaging Bulk (49 CFR 173.xxx)	:	242
Marine pollutant	:	No



14.3. Additional information

Other information : No supplementary information available.

Overland transport

Packing group (ADR)	:	II
Class (ADR)	:	3 - Flammable liquids
Hazard identification number (Kemler No.)	:	33
Classification code (ADR)	:	F1
Danger labels (ADR)	:	3 - Flammable liquids



Orange plates :



Tunnel restriction code	:	D/E
Limited quantities (ADR)	:	1L
EAC code	:	3YE
Excepted quantities (ADR)	:	E2

Transport by sea

DOT Vessel Stowage Location	:	B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
MFAG-No	:	130

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	60 L
Civil Aeronautics Law	:	Flammable liquids(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

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14.4. Environmental hazards

Dangerous for the environment :



Other information : No supplementary information available.

14.5. Special precautions for user

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

NATIVE MONO-HEXA CHLORO BENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE

Listed on SARA Section 313 (Specific toxic chemical listings)

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

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard
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15.2. International regulations

CANADA

NATIVE MONO-HEXA CHLORO BENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE

Listed on the Canadian DSL (Domestic Substances List) inventory.

TOLUENE UNLABELED (108-88-3)

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.2.1. National regulations

No additional information available

15.3. US State regulations

NATIVE MONO-HEXA CHLORO BENZENE SOLUTION UNLABELED 500 UG/ML IN TOLUENE()

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 WARNING! This product contains a chemical known by the state of California to cause birth defects or other reproductive harm.
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TOLUENE UNLABELED (108-88-3)

U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - New Jersey - Right to Know Hazardous Substance List
WARNING! This product contains a chemical known by the state of California to cause birth defects or other reproductive harm.

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

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Other information : None.

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

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) 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 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Flam. Sol. 1	Flammable solids, Category 1
Repr. 2	Reproductive toxicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
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
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H228	Flammable solid
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
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H361d	Suspected of damaging the unborn child
H370	Causes damage to organs
H371	May cause damage to organs
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
H412	Harmful to aquatic life with long lasting effects
R10	Flammable
R11	Highly flammable
R20	Harmful by inhalation
R20/22	Harmful by inhalation and if swallowed
R22	Harmful if swallowed
R36	Irritating to eyes
R36/37/38	Irritating to eyes, respiratory system and skin
R36/38	Irritating to eyes and skin
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R40	Limited evidence of a carcinogenic effect
R45	May cause cancer
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
R52/53	Harmful to aquatic organisms, 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
R65	Harmful: may cause lung damage if swallowed
R67	Vapours may cause drowsiness and dizziness
F	Highly flammable
N	Dangerous for the environment

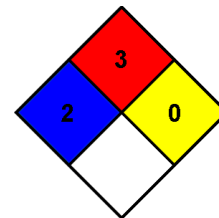
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T	Toxic
Xi	Irritant
Xn	Harmful

- 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