



1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 4/16/2015 Revision date: 9/5/2023 Supersedes: 4/17/2020 Version: 2.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : 1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE
Product code : CLM-9012-S

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

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

1.4. Emergency telephone number

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

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapor
Acute toxicity (inhalation:dust,mist) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Carcinogenicity Category 2	H351	Suspected of causing cancer (Dermal, Inhalation, oral)
Reproductive toxicity Category 2	H361	(Dermal, Inhalation, oral)
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
Specific target organ toxicity (single exposure) Category 2	H371	May cause damage to organs (brain, kidneys, liver, urinary bladder) (Dermal, Inhalation, oral)
Specific target organ toxicity (repeated exposure) Category 2	H373	May cause damage to organs (brain, kidneys, liver, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral)
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways
Hazardous to the aquatic environment – Acute Hazard Category 2	H401	Toxic to aquatic life

Full text of H statements : see section 16

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2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H225 - Highly flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer (Dermal, Inhalation, oral)
H361 - (Dermal, Inhalation, oral)
H371 - May cause damage to organs (brain, kidneys, liver, urinary bladder) (Dermal, Inhalation, oral)
H373 - May cause damage to organs (brain, kidneys, liver, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral)
H401 - Toxic to aquatic life

Precautionary statements (GHS US)

: 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, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe mist, spray, vapors, gas, fume, dust.
P261 - Avoid breathing vapors, spray, mist, fume, gas, dust.
P264 - Wash Both hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, face protection, eye protection.
P301+P310 - If swallowed: Immediately call a poison center or doctor.
P302+P352 - If on skin: Wash with plenty of water.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P312 - Call a poison center or doctor if you feel unwell.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see Hazard pictograms (CLP) on this label).
P331 - Do NOT induce vomiting.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Store in a well-ventilated place. Keep cool.

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P405 - Store locked up.

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

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
TOLUENE UNLABELED	CAS-No.: 108-88-3	99.9942	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401
1-HYDROXYPYRENE (13C6, 99%)	CAS-No.: 5315-79-7 (Unlabeled)	0.0058	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
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: Wash with plenty of soap and water, Get immediate medical advice/attention. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Immediately call a poison center or doctor/physician.

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

Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Symptoms/effects. IF INHALED: lungs. Pulmonary irritation. Pulmonary edema. Chest pain. central nervous system. Stomach - Irregularities - Based on Human Evidence. Lung irritation, chest pain, pulmonay edema, Inhalation studies have shown the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotom in animals.
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Symptoms/effects	: if inhaled, if swallowed, in contact with skin (in contact with skin, if inhaled, if swallowed). May cause damage to organs (brain, kidneys, liver, urinary bladder) ((in contact with skin, if inhaled, if swallowed). Suspected of causing cancer (in contact with skin, if inhaled, if swallowed). May cause damage to organs (brain, kidneys, liver, urinary bladder) through prolonged or repeated exposure ((in contact with skin, if inhaled, if swallowed).
Symptoms/effects after inhalation	: Harmful if inhaled. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Dry powder. Dry sand. Dry chemical. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

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

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Wear recommended personal protective equipment.
Other information	: Use water spray to cool exposed surfaces.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Flammable liquids. No open flames. No smoking. Eliminate every possible source of ignition. Use special care to avoid static electric charges.
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6.1.1. For non-emergency personnel

Emergency procedures	: Use personal protective equipment as required. Ensure adequate air ventilation. Avoid breathing vapors, mist, gas. Eliminate all ignition sources if safe to do so. Evacuate unnecessary personnel. Special attention should be given to low areas/pits where flammable vapors can accumulate.
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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".
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6.2. Environmental precautions

Prevent liquid from entering sewers, watercourses, underground or low areas. Do not allow to enter drains or water courses. Do not discharge the product into the environment.

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6.3. Methods and material for containment and cleaning up

- For containment : Dike and contain spill. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.
- Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. This material and its container must be disposed of in a safe way, and as per local legislation.
- 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 eye and skin contact and do not breathe vapor and mist. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Handle empty containers with care because residual vapors are flammable.
- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Do not breathe dust, fume, gas, spray, vapors, mist. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area. No open flames. No smoking. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust, fume, gas, mist, spray, vapors.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof Lighting equipment, ventilating equipment.
- Storage conditions : Store refrigerated (-5 °C to 5 °C). Protect from light.
- Incompatible materials : Heat sources.
- Storage area : Under inert gas.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA [ppm]	20 ppm USA. ACGIH Threshold Limit Values (TLV)
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1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE	
Remark (ACGIH)	Visual impairment. Female reproductive. Pregnancy loss. 2015 Adoption. Substances for which there is a Biological Exposure Index or Indices (see BEI® section). Not classifiable as a human carcinogen.; Component: Toluene CAS-No.: 108-88-3 Parameters: Toluene Value: 0.0300 mg/l Biological specimen: Urine Remarks: End of shift (As soon as possible after exposure ceases) Basis: ACGIH - Biological Exposure Indices (BEI); Component: Toluene CAS-No.: 108-88-3 Parameters: Toluene Value: 0.0200 mg/l Biological specimen: In blood Remarks: Prior to last shift of workweek Basis: ACGIH - Biological Exposure Indices (BEI); Component: Toluene CAS-No.: 108-88-3 Parameters: o-Cresol Value: 0.3000 mg/g Biological specimen: Urine Remarks: End of shift (As soon as possible after exposure ceases) Basis: ACGIH - Biological Exposure Indices (BEI)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	375 mg/m ³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL TWA [2]	100 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL STEL [1]	560 mg/m ³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL STEL [2]	150 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL C [ppm]	300 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-2
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	500 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-2
Remark (OSHA)	OSHA PEL (TWA) - 200 ppm - USA. Occupational Exposure Limits (OSHA) - Table Z-2. Remarks: Z37.12-1967
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	375 mg/m ³ USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	100 ppm USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL	560 mg/m ³ USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL [ppm]	150 ppm USA. NIOSH Recommended Exposure Limits
1-HYDROXYPYRENE (13C6, 99%) (5315-79-7 (Unlabeled))	
USA - ACGIH - Occupational Exposure Limits	
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
TOLUENE UNLABELED (108-88-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	20 ppm USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	Visual impairment. Female reproductive. Pregnancy loss. 2015 Adoption. Substances for which there is a Biological Exposure Index or Indices (see BEI® section). Not classifiable as a human carcinogen.; Component: Toluene CAS-No.: 108-88-3 Parameters: Toluene Value: 0.0300 mg/l Biological specimen: Urine Remarks: End of shift (As soon as possible after exposure ceases) Basis: ACGIH - Biological Exposure Indices (BEI); Component: Toluene CAS-No.: 108-88-3 Parameters: Toluene Value: 0.0200 mg/l Biological specimen: In blood Remarks: Prior to last shift of workweek Basis: ACGIH - Biological Exposure Indices (BEI); Component: Toluene CAS-No.: 108-88-3 Parameters: o-Cresol Value: 0.3000 mg/g Biological specimen: Urine Remarks: End of shift (As soon as possible after exposure ceases) Basis: ACGIH - Biological Exposure Indices (BEI)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	375 mg/m ³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000

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TOLUENE UNLABELED (108-88-3)	
OSHA PEL TWA [2]	100 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL STEL [1]	560 mg/m ³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL STEL [2]	150 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants 1910.1000
OSHA PEL C [ppm]	300 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-2
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	500 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-2
Remark (OSHA)	OSHA PEL (TWA) - 200 ppm - USA. Occupational Exposure Limits (OSHA) - Table Z-2. Remarks: Z37.12-1967

USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	375 mg/m ³ USA. NIOSH Recommended Exposure Limits
NIOSH REL TWA [ppm]	100 ppm USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL	560 mg/m ³ USA. NIOSH Recommended Exposure Limits
NIOSH REL STEL [ppm]	150 ppm USA. NIOSH Recommended Exposure Limits

8.2. Appropriate engineering controls

- Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

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

Materials for protective clothing:
Wear suitable protective clothing and gloves
Hand protection:
Wear suitable protective clothing and gloves
Eye protection:
Wear eye protection. Chemical goggles or face shield with safety glasses
Skin and body protection:
Wear suitable protective clothing, gloves and eye/face protection. Wear suitable protective clothing
Respiratory protection:
In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.

Personal protective equipment symbol(s):



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: aromatic
Odor threshold	: No data available
pH	: 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 °C (39.2 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor.
Vapor pressure	: 29.1 hPa (21.8 mmHg) at 20.0 °C (68.0 °F)
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 0.865 g/ml at 25 °C (77 °F)
Molecular mass	: 92.14 g/mol
Solubility	: Water: 0.5 g/l
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: 535 °C (995 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 1.2 – 7 % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

See storage and expiration date on CoA.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂).

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

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LD50 oral rat	> 5580 mg/kg
LD50 dermal rabbit	12196 mg/kg
LC50 Inhalation - Rat	12,500 - 28,800 mg/m ³ - 4 h
ATE US (dermal)	12196 mg/kg body weight
ATE US (vapors)	12.5 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

TOLUENE UNLABELED (108-88-3)

LD50 oral rat	> 5580 mg/kg
LD50 dermal rabbit	12196 mg/kg
LC50 Inhalation - Rat	12,500 - 28,800 mg/m ³ - 4 h
ATE US (dermal)	12196 mg/kg body weight
ATE US (vapors)	12.5 mg/l/4h
ATE US (dust, mist)	12.5 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer (Dermal, Inhalation, oral).

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE

IARC group	3 - Not classifiable
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TOLUENE UNLABELED (108-88-3)

IARC group	3 - Not classifiable
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Reproductive toxicity : (Dermal, Inhalation, oral).
STOT-single exposure : May cause drowsiness or dizziness. May cause damage to organs (brain, kidneys, liver, urinary bladder) (Dermal, Inhalation, oral).

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STOT-single exposure	May cause respiratory irritation.
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TOLUENE UNLABELED (108-88-3)

STOT-single exposure	May cause drowsiness or dizziness.
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STOT-repeated exposure : May cause damage to organs (brain, kidneys, liver, urinary bladder) through prolonged or repeated exposure (Dermal, Inhalation, oral).

TOLUENE UNLABELED (108-88-3)

STOT-repeated exposure	May cause damage to organs (kidneys, liver, urinary bladder, brain) through prolonged or repeated exposure (Dermal, Inhalation, oral).
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Aspiration hazard : May be fatal if swallowed and enters airways.

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Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Symptoms/effects. IF INHALED: lungs. Pulmonary irritation. Pulmonary edema. Chest pain. central nervous system. Stomach - Irregularities - Based on Human Evidence. Lung irritation, chest pain, pulmonay edema, Inhalation studies have shown the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotom in animals.
Symptoms/effects	: if inhaled, if swallowed, in contact with skin (in contact with skin, if inhaled, if swallowed). May cause damage to organs (brain, kidneys, liver, urinary bladder) ((in contact with skin, if inhaled, if swallowed). Suspected of causing cancer (in contact with skin, if inhaled, if swallowed). May cause damage to organs (brain, kidneys, liver, urinary bladder) through prolonged or repeated exposure ((in contact with skin, if inhaled, if swallowed).
Symptoms/effects after inhalation	: Harmful if inhaled. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed and enters airways. Risk of lung edema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Toxic to bees.
Ecology - water	: Toxic to aquatic life.

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE	
EC50 - Crustacea [1]	8 mg/l Daphnia magna (Water flea) - 24h
LC50 - Fish [2]	7.63 mg/l Oncorhynchus mykiss (Rainbow trout) - 96 h
EC50 - Crustacea [2]	6 mg/l Daphnia magna (Water flea) - Immobilization - 48 h
ErC50 algae	245 mg/l Chlorella vulgaris (Fresh water algae) - 24 h
ErC50 other aquatic plants	10 mg/l Pseudokirchneriella subcapitata (Green algae) - 24 h
NOEC (chronic)	5.44 mg/l Pimephales promelas (fathead minnow) - 7 d

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

12.2. Persistence and degradability

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE	
Persistence and degradability	Readily biodegradable.

TOLUENE UNLABELED (108-88-3)	
Persistence and degradability	Readily biodegradable.

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12.3. Bioaccumulative potential

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BCF - Fish [1]	0.05 mg/l Leuciscus idus (Golden orfe) - 3 d
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Bioconcentration factor (BCF REACH)	90
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TOLUENE UNLABELED (108-88-3)

BCF - Fish [1]	0.05 mg/l Leuciscus idus (Golden orfe) - 3 d
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Bioconcentration factor (BCF REACH)	90
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

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

SECTION 13: Disposal considerations

13.1. Disposal methods

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

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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

Ecology - waste materials : Dispose of as unused product. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No : UN1294

UN-No. (TDG) : UN1294

UN-No. (IMDG) : 1294

UN-No. (IATA) : 1294

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Toluene

Proper Shipping Name (TDG) : TOLUENE

Proper Shipping Name (IMDG) : TOLUENE

Proper Shipping Name (IATA) : Toluene

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 3

Hazard labels (DOT) : 3

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE

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TDG

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



IMDG

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



IATA

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



14.4. Packing group

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

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1294
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
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE

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DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

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.

TDG

UN-No. (TDG) : UN1294

Explosive Limit and Limited Quantity Index : 1 L

Excepted quantities (TDG) : E2

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : 5 L

Emergency Response Guide (ERG) Number : 130

IMDG

Limited quantities (IMDG) : 1 L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T4

Tank special provisions (IMDG) : TP1

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

EmS-No. (Spillage) : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS

Stowage category (IMDG) : B

Flash point (IMDG) : 7°C c.c.

Properties and observations (IMDG) : Colourless liquid with a benzene-like odour. Flashpoint: 7°C c.c. Explosive limits: 1.27% to 7% Immiscible with water.

MFAG-No : 130

IATA

PCA Excepted quantities (IATA) : E2

PCA Limited quantities (IATA) : Y341

PCA limited quantity max net quantity (IATA) : 1L

PCA packing instructions (IATA) : 353

PCA max net quantity (IATA) : 5L

CAO packing instructions (IATA) : 364

CAO max net quantity (IATA) : 60L

ERG code (IATA) : 3L

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE	
CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

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

Name	CAS-No.	Listing	Commercial status	Flags
1-HYDROXYPYRENE (13C6, 99%)	5315-79-7 (Unlabeled)	Not present	-	
TOLUENE UNLABELED	108-88-3	Present	Active	

1-HYDROXYPYRENE (13C6, 99%) (5315-79-7 (Unlabeled))

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

TOLUENE UNLABELED (108-88-3)

CERCLA RQ	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

15.2. International regulations

CANADA

TOLUENE UNLABELED (108-88-3)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

1-HYDROXYPYRENE (13C6, 99%) 50 UG/ML IN TOLUENE

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
No significant risk level (NSRL)	7000 µg/day

TOLUENE UNLABELED (108-88-3)

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

Component	State or local regulations
TOLUENE UNLABELED(108-88-3)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

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

Revision date

: 09/05/2023

Other information

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

Full text of H-phrases	
H225	Highly flammable liquid and vapor
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H371	May cause damage to organs
H373	May cause damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life

Safety Data Sheet (SDS), USA

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