



PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 11/11/2015 Revision date: 3/2/2023 Supersedes: 11/11/2015 Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE
Product code : ES-5164

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) 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	Suspected of damaging fertility or the unborn child (Dermal, Inhalation, oral)
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
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)
Hazardous to the aquatic environment – Acute Hazard Category 2	H401	Toxic to aquatic life
Hazardous to the aquatic environment – Chronic Hazard Category 2	H411	Toxic to aquatic life with long lasting effects

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
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 - Suspected of damaging fertility or the unborn child (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
H411 - Toxic to aquatic life with long lasting effects

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 dust, fume, gas, mist, spray, vapors.
P261 - Avoid breathing dust, fume, gas, mist, spray, vapors.
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 eye protection, face protection, protective clothing, protective gloves.
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).
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, Dry chemical, Carbon dioxide, Water spray to extinguish.
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.

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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	91.522	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
ISOCTANE UNLABELED	CAS-No.: 540-84-1	8.102	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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 medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a 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	: Suspected of damaging fertility. Suspected of damaging the unborn child. (Inhalation, Dermal, oral). Causes damage to organs (brain, kidneys, liver, urinary bladder) (Inhalation, Dermal, oral).

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Symptoms/effects after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

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 : 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 open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment, and ensure adequate ventilation. Avoid breathing vapors, mist, gas. Remove ignition sources, and move personnel to safe area. Vapors accumulate especially in low areas to form explosive concentrations.

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, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.
Methods for cleaning up : 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.

6.4. Reference to other sections

No additional information available

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling	: No open flames. No smoking. Use only non-sparking tools. Use only outdoors or in a well-ventilated area. Avoid breathing dust, mist or spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Hygiene measures	: Wash Both hands thoroughly after handling.

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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	20 ppm Visual impairment, Female reproductive, Pregnancy loss
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
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

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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

ISOCTANE UNLABELED (540-84-1)

USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA [ppm]	300 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Remark (ACGIH)	Upper Respiratory Tract irritation
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

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

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

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available

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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	: No data available
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 explosive mixture with air.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Open flame. Direct sunlight.

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 (oral)	: Not classified
Acute toxicity (dermal)	: Not classified

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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	12500 – 28800 mg/m ³ 4 h
ATE US (dermal)	12196 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
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

ISOCTANE UNLABELED (540-84-1)	
LD50 oral rat	> 5000 mg/kg (OECD Test Guideline 401)
LD50 dermal rabbit	> 2000 mg/kg (OECD Test Guideline 402)
LC50 Inhalation - Rat	> 33.52 mg/l/4h (OECD Test Guideline 403)

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).

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE	
IARC group	3 - Not classifiable

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

Reproductive toxicity : Suspected of damaging fertility or the unborn child (Dermal, Inhalation, oral).
STOT-single exposure : May cause drowsiness or dizziness.

TOLUENE UNLABELED (108-88-3)	
STOT-single exposure	May cause drowsiness or dizziness.

ISOCTANE UNLABELED (540-84-1)	
STOT-single exposure	May cause drowsiness or dizziness.

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

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TOLUENE UNLABELED (108-88-3)	
STOT-repeated exposure	May cause damage to organs (kidneys, liver, urinary bladder, brain) through prolonged or repeated exposure (Dermal, Inhalation, oral).
Aspiration hazard	: Not classified
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	: Suspected of damaging fertility. Suspected of damaging the unborn child. (Inhalation, Dermal, oral). Causes damage to organs (brain, kidneys, liver, urinary bladder) (Inhalation, Dermal, oral).
Symptoms/effects after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. May cause drowsiness or dizziness.
Symptoms/effects after skin contact	: Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: May be fatal if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE	
LC50 - Fish [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 - Crustacea [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 - Crustacea [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

TOLUENE UNLABELED (108-88-3)	
EC50 - Crustacea [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 - Crustacea [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
ErC50 other aquatic plants	10 mg/l <i>Pseudokirchneriella subcapitata</i> (Green algae) - 24 h
NOEC (chronic)	5.44 mg/l <i>Pimephales promelas</i> (fathead minnow) - 7 d

12.2. Persistence and degradability

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE	
Persistence and degradability	May cause long-term adverse effects in the environment.

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TOLUENE UNLABELED (108-88-3)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

TOLUENE UNLABELED (108-88-3)

BCF - Fish [1]	0.05 mg/l <i>Leuciscus idus</i> (Golden orfe) - 3 d
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Bioconcentration factor (BCF REACH)	90
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ISOCTANE UNLABELED (540-84-1)

Partition coefficient n-octanol/water (Log Pow)	4.6
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

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

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

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No	: 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)

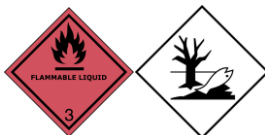
DOT

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

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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

Dangerous for the environment : Yes

Marine pollutant : Yes



Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1294

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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
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
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

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

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SECTION 15: Regulatory information

15.1. US Federal regulations

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

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
TOLUENE UNLABELED	108-88-3	Present	Active	
ISOCTANE UNLABELED	540-84-1	Present	Active	

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

ISOCTANE UNLABELED (540-84-1)

Not subject to reporting requirements of the United States SARA Section 313 Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1000 lb
SARA Section 311/312 Hazard Classes	Fire hazard Delayed (chronic) health hazard

15.2. International regulations

CANADA

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

Listed on the Canadian DSL (Domestic Substances List)

TOLUENE UNLABELED (108-88-3)

Listed on the Canadian DSL (Domestic Substances List)

ISOCTANE UNLABELED (540-84-1)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

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National regulations

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

ISOCTANE UNLABELED (540-84-1)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

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

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

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
ISOCTANE UNLABELED(540-84-1)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

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Revision date

: 03/02/2023

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

PAH SURROGATES STANDARD MIXTURE (D, 98%) 200 UG/ML IN 90% TOLUENE/10% ISOCTANE

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Full text of H-phrases	
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

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.