

## 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: 14/11/2014 Revision date: : Version: 1.0

**DLM-610-S** 

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

1.1. Product identifier

Product form : Mixtures

Product name. : BENZ[A]ANTHRACENE (D12, 98%) 200 UG/ML IN ISOOCTANE

Product code : DLM-610-S

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : For professional use only.

#### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.

50 Frontage Road Andover, MA 01810

USA

#### **Emergency telephone number**

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours) International: 1-202-483-7616 (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

 Skin Irrit. 2
 H315

 STOT SE 3
 H336

 Asp. Tox. 1
 H304

 Aquatic Acute 1
 H400

 Aquatic Chronic 1
 H410

Full text of H-phrases: see section 16

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

F; R11 Xi; R38 N; R50/53 R67

Full text of R-phrases: see section 16

#### **Classification (GHS-US)**

 Flam. Liq. 2
 H225

 Skin Irrit. 2
 H315

 STOT SE 3
 H336

 Asp. Tox. 1
 H304

 Aquatic Acute 1
 H400

 Aquatic Chronic 1
 H410

## Adverse physicochemical, human health and environmental effects

Liver, Kidney.

17/11/2014 EN (English US) 1/9

#### 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

#### Label elements

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

Hazard pictograms (CLP)









GHS02

GHS07

GHS08

GHS09

Signal word (CLP) : Danger

Hazard statements (CLP) H225 - Highly flammable liquid and vapor

H304 - May be fatal if swallowed and enters airways

H315 - Causes skin irritation

H336 - May cause drowsiness or dizziness

H410 - Very toxic 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

smokina

P233 - Keep container tightly closed

P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof electrical, lighting, ventilating equipment

P261 - Avoid breathing fume, mist, spray, vapors 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** 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

H336 - May cause drowsiness or dizziness

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking

P233 - Keep container tightly closed P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof electrical, lighting, ventilating equipment

P242 - Use only non-sparking tools

P243 - Take precautionary measures against static discharge

P261 - Avoid breathing fume, mist, spray, 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

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

P312 - Call a POISON CENTER/doctor/physician if you feel unwell

P331 - If swallowed, do NOT induce vomiting

P332+P313 - If skin irritation occurs: 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.

17/11/2014 EN (English US) 2/9

### 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

#### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Not applicable

#### 3.2. Mixtures

Name	Product identifier	%	Classification according to Directive 67/548/EEC
ISOOCTANE UNLABELED	(CAS No)540-84-1 (EC no)208-759-1 (EC index no)601-009-00-8	99.9711	F; R11 Xi; R38 N; R50/53 R67
BENZ[A]ANTHRACENE (D12, 98%)	(CAS No)1718-53-2 (EC no)200-280-6 (EC index no)601-033-00-9	0.0289	Carc.Cat.1; R45 N; R50/53

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ISOOCTANE UNLABELED	(CAS No)540-84-1 (EC no)208-759-1 (EC index no)601-009-00-8	99.9711	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
BENZ[A]ANTHRACENE (D12, 98%)	(CAS No)1718-53-2 (EC no)200-280-6 (EC index no)601-033-00-9	0.0289	Carc. 1A, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Name	Product identifier	%	Classification (GHS-US)
ISOOCTANE UNLABELED	(CAS No)540-84-1	99.9711	Flam. Liq. 1, H224 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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 : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

dangerous area.

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON

CENTER/doctor/physician if you feel unwell.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water.

Wash contaminated clothing before reuse.

First-aid measures after eye contact : Flush eyes with water as a precaution.

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

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

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

Symptoms/injuries after skin contact : Causes skin irritation. Symptoms/injuries after eye contact : Causes eye irritation.

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

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

No additional information available

## SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

suitable extinguishing media

: For small fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

17/11/2014 EN (English US) 3/9

### 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

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapor.

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

Reactivity : Vapors may form explosive mixture with air.

## 5.3. Advice for firefighters

Firefighting instructions : Use water spray to cool unopened containers.

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

#### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. U

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

## 6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment, 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

No additional information available

#### 6.2. Environmental precautions

Avoid release to the environment.

## 6.3. Methods and material for containment and cleaning up

For containment : Contain spillage, and

: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations.

#### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

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

Precautions for safe handling : No naked lights. No smoking. Use only non-sparking tools. Use only outdoors or in a well-

ventilated area.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and at the end of workday.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond

container and receiving equipment. Keep container tightly closed in a dry and well-ventilated

space.

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

Incompatible materials : Heat sources

#### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

No additional information available

## 8.2. Exposure controls

Personal protective equipment : Gloves. Safety glasses. Respiratory protection of the dependent type. Protective clothing.



Hand protection

: protective gloves.

Eye protection

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

Skin and body protection

: Wear suitable protective clothing.

Respiratory protection

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

17/11/2014 EN (English US) 4/9

### 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

## 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 : 114.23

Color : No data available.

Odor : No data available

Odor threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : -107 °C (-161 °F)

Freezing point : No data available

Boiling point : 99 °C (210 °F)

Flash point : -12 °C (10 °F) - closed cup

Self ignition temperature : 396 °C (745 °F)

Decomposition temperature : No data available

Flammability (solid, gas) : Highly flammable liquid and vapor Vapor pressure : 55 hPa (41 mmHg) at 21 °C (70 °F)

Relative vapor density at 20 °C : 3.94 - (Air = 1.0) : No data available Relative density Solubility : Water: 0 % Log Pow : No data available Log Kow : No data available Viscosity, kinematic : No data available Viscosity, dynamic : No data available : No data available Explosive properties : No data available Oxidizing properties Explosive limits : 1-6%(V)

#### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Vapors may form explosive mixture with air.

## 10.2. Chemical stability

See storage and expiration date on CoA.

#### 10.3. Possibility of hazardous reactions

No additional information available

## 10.4. Conditions to avoid

Open flame. 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 : Not classified

BENZ[A]ANTHRACENE	(D12, 98%) (1718-53-2)	

LD50 Intravenous - rat - >200 mg/kg

Skin corrosion/irritation : Causes skin irritation.

No data available

17/11/2014 EN (English US) 5/9

### 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

Serious eye damage/irritation : Not classified

No data available

Respiratory or skin sensitization : Not available

No data available

Germ cell mutagenicity : Not classified Carcinogenicity : Not classified

Reproductive toxicity : Not available

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

Specific target organ toxicity (repeated

exposure)

Not classifiedNo data available

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

Potential Adverse human health effects and

symptoms

 $: \ \, \text{The chemical, physical, and toxicological properties have not been thoroughly investigated.}$ 

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

Symptoms/injuries after skin contact : Causes skin irritation. Symptoms/injuries after eye contact : Causes eye irritation.

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

## SECTION 12: Ecological information

#### 12.1. Toxicity

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

#### 12.2. Persistence and degradability

BENZIAIAN	ITHRACENE (D12	. 98%) 200 UG/ML	. IN ISOOCTANE

Persistence and degradability May cause long-term adverse effects in the environment.

#### **ISOOCTANE UNLABELED (540-84-1)**

Persistence and degradability Not available.

## BENZ[A]ANTHRACENE (D12, 98%) (1718-53-2)

Persistence and degradability Not available.

#### 12.3. Bioaccumulative potential

#### BENZ[A]ANTHRACENE (D12, 98%) 200 UG/ML IN ISOOCTANE

Bioaccumulative potential Not available.

## **ISOOCTANE UNLABELED (540-84-1)**

Bioaccumulative potential Not available.

#### BENZ[A]ANTHRACENE (D12, 98%) (1718-53-2)

Bioaccumulative potential Not available.

## 12.4. Mobility in soil

## BENZ[A]ANTHRACENE (D12, 98%) 200 UG/ML IN ISOOCTANE

Ecology - soil Not available.

## ISOOCTANE UNLABELED (540-84-1)

Ecology - soil Not available.

## BENZ[A]ANTHRACENE (D12, 98%) (1718-53-2)

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. Very toxic to aquatic organisms.

17/11/2014 EN (English US) 6/9

## 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

## SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

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

environmental control regulations.

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

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

Ecology - waste materials : Hazardous waste due to toxicity.

#### SECTION 14: Transport information

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

14.1. UN number

UN-No.(DOT) : 1262 DOT NA no. UN1262

#### 14.2. UN proper shipping name

DOT Proper Shipping Name : Octanes

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

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

#### 14.3. Additional information

Other information : No supplementary information available.

## **Overland transport**

Packing group (ADR) : II

Class (ADR) : 3 - Flammable liquid

Hazard identification number (Kemler No.) : 33 Classification code (ADR) : F1

Danger labels (ADR) : 3 - Flammable liquids



Orange plates

33 1262

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

17/11/2014 EN (English US) 7/9

### 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

#### 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 : 128

#### Air transport

DOT Quantity Limitations Passenger aircraft/rail : 5 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 60 L

CFR 175.75)

Civil Aeronautics Law : Flammable liquids

#### 14.4. Environmental hazards

Dangerous for the environment

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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

BENZ[A]ANTHRACENE (D12, 98%) 200 UG/ML IN ISOOCTANE		
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard	

## **ISOOCTANE UNLABELED (540-84-1)**

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

#### 15.2. International regulations

## **CANADA**

#### BENZ[A]ANTHRACENE (D12, 98%) 200 UG/ML IN ISOOCTANE

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

## 15.2.1. National regulations

No additional information available

## 15.3. US State regulations

## BENZ[A]ANTHRACENE (D12, 98%) 200 UG/ML IN ISOOCTANE()

State or local regulations

U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - New Jersey - Right to Know Hazardous Substance List

This product does not contain any chemicals known to State of California to cause cancer,

birth defects, or any other reproductive harm.

## **ISOOCTANE UNLABELED (540-84-1)**

U.S. - Massachusetts - Right To Know List

U.S. - Pennsylvania - RTK (Right to Know) List

17/11/2014 EN (English US) 8/9

## 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

#### **ISOOCTANE UNLABELED (540-84-1)**

U.S. - New Jersey - Right to Know Hazardous Substance List

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## **SECTION 16: Other information**

Other information

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

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

Hazardous to the aquatic environment - Acute Hazard Category 1
Hazardous to the aquatic environment - Chronic Hazard Category 1
Aspiration hazard Category 1
Carcinogenicity Category 1A
Flammable liquids Category 2
skin corrosion/irritation Category 2
Specific target organ toxicity (single exposure) Category 3
Highly flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
May cause drowsiness or dizziness
May cause cancer
Very toxic to aquatic life
Very toxic to aquatic life with long lasting effects
Highly flammable
Irritating to skin
May cause cancer
Very toxic to aquatic organisms, may cause long-term adverse effects
in the aquatic environment
Vapors may cause drowsiness and dizziness
Highly flammable
Dangerous for the environment
Irritant

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

17/11/2014 EN (English US) 9/9