

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

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Revision date:

Version: 1.0

PCB-80-CS

SECTION 1: Identification of the s	ubstance/mixture and of the company/undertaking
I.1. Product identifier	
Product form	: Mixture
Product name.	: 3,3',5,5'-TETRACB 100 UG/ML IN ISOOCTANE UNLABELED CERTIFIED STANDARD
Product code	: PCB-80-CS
1.2. Relevant identified uses of the su	ubstance or mixture and uses advised against
1.2.1. Relevant identified uses	
Main use category	: Professional use
ndustrial/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 safe	tv 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: 1-202-483-7616 (24 hours)	
SECTION 2: Hazards identificatior	
2.1. Classification of the substance o	r mixture
Classification according to Regulation (EC	;) No. 1272/2008 [CLP]
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 H-phrases: see section 16	
Classification according to Directive 67/64	8/EEC or 1000//5/EC
Classification according to Directive 67/54 F; R11 Xn; R65 Xi; R38 N; R50/53 R67	
Full tout of D interestion and the 40	

Full text of R-phrases: see section 16

GHS-US classification

Flam. Liq. 1	H224
Skin Irrit. 2	H315
STOT SE 3	H336
Asp. Tox. 1	H304
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

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Adverse physicochemical, human health and environmental effects

Liver, Kidney.



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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.

Other hazards 2.3.

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2.	 lixture	

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	99.9855	F; R11 Xn; R65 Xi; R38 N; R50/53 R67
3,3',5,5'-TETRACB UNLABELED	(CAS No)33284-52-5 (Unlabeled) (EC index no)602-039-00-4	0.0145	Xn; R48/20/21/22 N; R50/53 R33
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	99.9855	Flam. Liq. 1, H224 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3',5,5'-TETRACB UNLABELED	(CAS No)33284-52-5 (Unlabeled) (EC index no)602-039-00-4	0.0145	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Name	Product identifier	%	GHS-US classification
ISOOCTANE UNLABELED	(CAS No)540-84-1	99.9855	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 measure	95
First-aid measures general	 Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
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	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. 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 ingestion	: May be fatal if swallowed and enters airways.
4.3. Indication of any immediate me	dical attention and special treatment needed
No additional information available	
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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 su	bstance or mixture
Fire hazard	: Extremely flammable liquid and vapour.
Explosion hazard	: May form flammable/explosive vapour-air mixture.
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 meas	sures
6.1. Personal precautions, protective eq	uipment and emergency procedures
General measures	: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.
6.1.1. For non-emergency personnel	
Emergency procedures	: Evacuate unnecessary personnel.
6.1.2. For emergency responders	
Protective equipment	: Equip cleanup crew with proper protection. Avoid breathing dust, mist or spray.
Emergency procedures	: Ventilate area.
6.2. Environmental precautions	v authorities if liquid enters sewers or public waters. Avoid release to the environment.
6.3. Methods and material for containme	
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collec spillage. Store aways from other materials.
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. Take precautionary measures against static discharge. Use only nor sparking tools. Avoid breathing dust, mist or spray. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Wash Both hands thoroughly after handling.
7.2. Conditions for safe storage, including	ng any incompatibilities
Technical measures	: 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/pers	onal protoction

SECTION 8: EX	posure controls	s/personal	protection

8.1. **Control parameters**

No additional information available

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8.2. Exposure controls	
Personal protective equipment	: 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 Respiratory protection	: Wear suitable protective clothing. : Where exposure through inhalation may occur from use, respiratory protection equipment is
	recommended. Wear respiratory protection.
Other information	: When using, do not eat, drink or smoke.
SECTION 9: Physical and chemica	I properties
9.1. Information on basic physical and	
The properties listed below are for the solvent, the main comp	
Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 114.23
Colour	: Colourless.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -107 °C (- 161 °F)
Freezing point	: No data available
Boiling point	: 98 - 99 °C (208 - 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)	: Extremely flammable liquid and vapour
Vapour pressure	: 55 hPa (41 mmHg) at 21 °C (70 °F)
Relative vapour density at 20 °C	: 3.94 - (Air = 1.0)
Relative density	: No data available
Solubility	: Water: 0 %
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 - 6 % (V)
9.2. Other information	
No additional information available	
SECTION 10: Stability and reactivit	iy
10.1. Reactivity No additional information available	
10.2. Chemical stability See storage and expiration date on CoA.	
See storage and expiration date on COA.	

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

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

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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 informat	ion
11.1. Information on toxicological effects	
Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met : Not classified
	Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified
Carcinogenicity	Based on available data, the classification criteria are not met : Not classified
Carenogenery	Based on available data, the classification criteria are not met
Reproductive toxicity	: Not classified
	Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated	: Not classified
exposure)	Based on available data, the classification criteria are not met
Aspiration hazard	: May be fatal if swallowed and enters airways.
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause drowsiness or dizziness.
Symptoms/injuries after skin contact	: Causes skin 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		
3,3',5,5'-TETRACB 100 UG/ML IN ISOOCTANE UNLABELED CERTIFIED STANDARD		
Persistence and degradability	May cause long-term adverse effects in the environment.	
ISOOCTANE UNLABELED (540-84-1)		
Persistence and degradability	Not available.	
3,3',5,5'-TETRACB UNLABELED (33284-52-5 (Jnlabeled))	
Persistence and degradability	Not available.	
12.3. Bioaccumulative potential		
3,3',5,5'-TETRACB 100 UG/ML IN ISOOCTANE	UNLABELED CERTIFIED STANDARD	
Bioaccumulative potential	Not established.	
ISOOCTANE UNLABELED (540-84-1)		
Bioaccumulative potential	Not available.	
3,3',5,5'-TETRACB UNLABELED (33284-52-5 (Unlabeled))		
Bioaccumulative potential	Not available.	
12.4. Mobility in soil		
ISOOCTANE UNLABELED (540-84-1)		
Ecology - soil	Not available.	
3,3',5,5'-TETRACB UNLABELED (33284-52-5 (Unlabeled))		
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Ecology - soil	Not available.
12.5. Results of PBT and vPvB assessme	ent
No additional information available	
12.6. Other adverse effects	
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideratio	ns
13.1. Waste treatment methods	
Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and Loca 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. Hazardous waste due to toxicity.
SECTION 14: Transport information	
In accordance with ADR / RID / ADNR / IMDG /	ICAO / IATA
14.1. UN number	
JN-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
	3
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 11 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
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	
2014.3. Additional information	: No supplementary information available.

: No supplementary information available.

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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	33 1262
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	: 128
Air transport	
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5L
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)
14.4 Environmental herordo	
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 Anne	x II of MARPOL 73/78 and the IBC Code
Not applicable	
SECTION 15: Regulatory information	
15.1. US Federal regulations	
3,3',5,5'-TETRACB 100 UG/ML IN ISOOCTAN	IE UNLABELED CERTIFIED STANDARD
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

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15.2. International regulations

CANADA

3,3',5,5'-TETRACB 100 UG/ML IN ISOOCTANE UNLABELED CERTIFIED STANDARD

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

15.2.1. National regulations

No additional information available

15.3. US State regulations 3,3',5,5'-TETRACB 100 UG/ML IN ISOOCTANE UNLABELED CERTIFIED STANDARD()		

ISOOCTANE UNLABELED (540-84-1)

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.

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.
Other information	: None.

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Aquatic Acute 1	Hazardous to the aquatic environment — AcuteHazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Liq. 1	Flammable liquids, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H224	Extremely flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H336	May cause drowsiness or dizziness
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
R11	Highly flammable
R33	Danger of cumulative effects
R38	Irritating to skin
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effect in the aquatic environment
R65	Harmful: may cause lung damage if swallowed
R67	Vapours may cause drowsiness and dizziness
F	Highly flammable
N	Dangerous for the environment
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