

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-4-CS

SECTION 1: Identification of the	substance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Mixture
Product name.	: 2,2'-DICB 100 UG/ML IN ISOOCTANE UNLABELED CERTIFIED STANDARD
Product code	: PCB-4-CS
1.2. Relevant identified uses of the	substance or mixture and uses advised against
1.2.1. Relevant identified uses	
Main use category	: Professional use
Industrial/Professional use spec	: For professional use only. Industrial.
1.2.2. Uses advised against	
No additional information available	
1.3. Details of the supplier of the sa	fety data sheet
Cambridge Isotope Laboratories, Inc. 50 Frontage Road Andover, MA 01810 USA	
USA: 1-800-322-1174 Int: 1-978-749-800 cilsales@isotope.com www.isotope.com	0
Emergency telephone number	
Emergency numbers:	
Chemtrec: 1-800-424-9300 (24 hours) International: 1-202-483-7616 (24 hours)	
SECTION 2: Hazards identification	n j
2.1. Classification of the substance	or mixture
Classification according to Regulation (E	C) 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 67/5	548/EEC or 1999/45/EC
F; R11 Xn; R65 Xi; R38 N; R50/53 R67	
Full text of R-phrases: see section 16	
GHS-US classification	
Flam. Liq. 1	H224

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

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
2,2'-DICB UNLABELED	(CAS No)13029-08-8 (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
2,2'-DICB UNLABELED	(CAS No)13029-08-8 (Unlabeled) (EC index no)602-039-00-4	0.0145	Carc. 1B, H350 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 measures	
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 effect	ts, 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.

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	dical attention and special treatment needed
No additional information available	
SECTION 5: Firefighting measure	s
5.1. Extinguishing media	
Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.
5.2. Special hazards arising from the	substance or mixture
Fire hazard	: 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 m	easures
6.1. Personal precautions, protective	e equipment 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	
Prevent entry to sewers and public waters. N	lotify authorities if liquid enters sewers or public waters. Avoid release to the environment.
6.3. Methods and material for contai	nment and cleaning up
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store aways from other materials.
6.4. Reference to other sections	
See Heading 8. Exposure controls and perso	onal protection.
SECTION 7: Handling and storage	e
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 non 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, incl	
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/p	ersonal protection

8.1. Control parameters

No additional information available

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8.2. Exposure controls		Clause Protective elething Protective geogles. Self contained treathing enparature
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	:	Wear suitable protective clothing.
Respiratory protection	:	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 chemical	l pro	operties
9.1. Information on basic physical and	l che	mical properties
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
рН	:	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	y	
10.1. Reactivity		
No additional information available		

No additional information available

10.2. Chemical stability

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 Based on available data, the classification criteria are not met
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	Based on available data, the classification criteria are not met : Not classified
	Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified Based on available data, the classification criteria are not met
Description (active)	
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.ToxicityEcology - water

: Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability	
2,2'-DICB 100 UG/ML IN ISOOCTANE UNLAB	ELED CERTIFIED STANDARD
Persistence and degradability	May cause long-term adverse effects in the environment.
ISOOCTANE UNLABELED (540-84-1)	
Persistence and degradability	Not available.
2,2'-DICB UNLABELED (13029-08-8 (Unlabeled	d))
Persistence and degradability	Not available.
12.3. Bioaccumulative potential	
2,2'-DICB 100 UG/ML IN ISOOCTANE UNLAB	ELED CERTIFIED STANDARD
Bioaccumulative potential	Not established.
ISOOCTANE UNLABELED (540-84-1)	
Bioaccumulative potential	Not available.
2,2'-DICB UNLABELED (13029-08-8 (Unlabeled	d))
Log Pow	4.1
Bioaccumulative potential	Not available.
12.4. Mobility in soil	
ISOOCTANE UNLABELED (540-84-1)	
Ecology - soil	Not available.
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2,2'-DICB UNLABELED (13029-08-8 (Unlabe	
Ecology - soil	Not available.
12.5. Results of PBT and vPvB assessme	nt
No additional information available	
12.6. Other adverse effects	
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideration	ns
13.1. Waste treatment methods	
Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and Local
	environmental control regulations.
Waste disposal recommendations	 Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to Comply with applicable regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment. Hazardous waste due to toxicity.
SECTION 14. Transmert information	
SECTION 14: Transport information	
In accordance with ADR / RID / ADNR / IMDG / I	ICAO / TATA
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
	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 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
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	No supplementary information subjichle

Other information

: No supplementary information available.

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Overland transport	
Packing group (ADR)	: 11
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 hazards	
Dangerous for the environment	: ^
Other information	: No supplementary information available.
14.5. Special precautions for user	
	x II of MARPOL 73/78 and the IBC Code
Not applicable	
SECTION 15: Regulatory information	
15.1. US Federal regulations	
2.2'-DICB 100 UG/ML IN ISOOCTANE UNLA	3ELED CERTIFIED STANDARD
SARA Section 311/312 Hazard Classes	Fire hazard
	Immediate (acute) health hazard Delaved (chronic) health hazard

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15.2. International regulations

CANADA

2,2'-DICB 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	
2,2'-DICB 100 UG/ML IN ISOOCTANE UNLABE	LED CERTIFIED STANDARD()
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

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

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
Carc. 1B	Carcinogenicity, Category 1B
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
H350	May cause cancer
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 effects in the aquatic environment
R65	Harmful: may cause lung damage if swallowed
R67	Vapours may cause drowsiness and dizziness
F	Highly flammable
Ν	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