

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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EO-5362

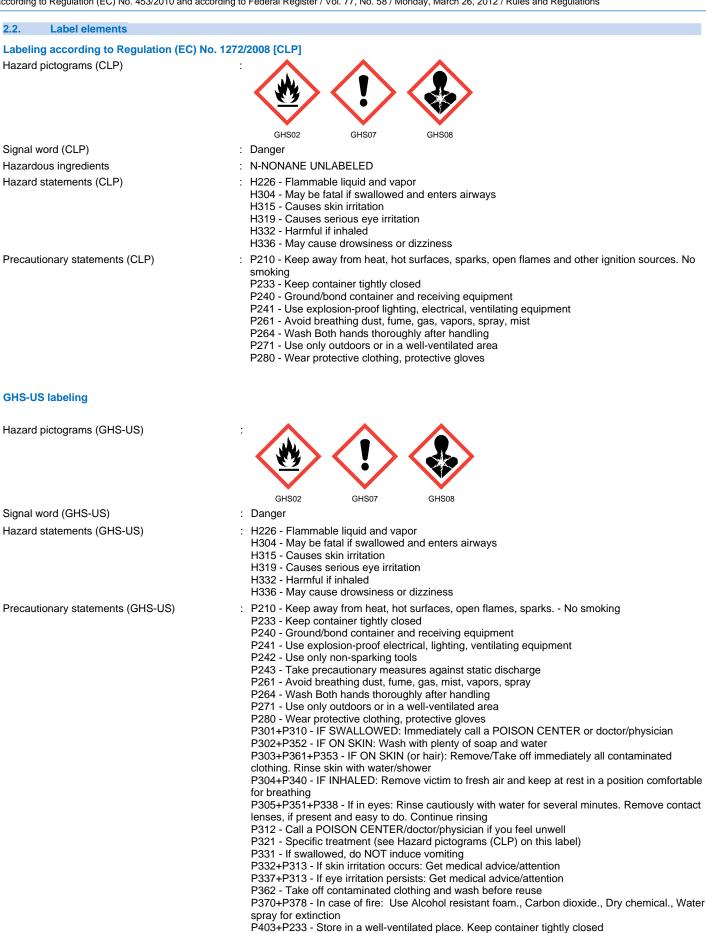
SECTION 1: Identification of the s	ubstance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Mixtures
Product name.	: 2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%) 50 UG/ML IN NONANE
Product code	: EO-5362
1.2. Relevant identified uses of the su	ubstance or mixture and 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 safe	ety data sheet
Cambridge Isotope Laboratories, Inc.	
50 Frontage Road	
Andover, MA 01810 USA	
USA: 1-800-322-1174 Int: 1-978-749-8000	
<u>cilsales@isotope.com</u> www.isotope.com	
Emergency telephone number	
Emergency numbers:	
Chemtrec: 1-800-424-9300 (24 hours) nternational: 1-202-483-7616 (24 hours)	
SECTION 2: Hazards identificatior	h de la companya de l
2.1. Classification of the substance o	r mixture
Classification according to Regulation (EC	;) No. 1272/2008 [CLP]
Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 3	H336
Asp. Tox. 1	H304
Full text of H-phrases: see section 16	
Classification according to Directive 67/54	
Xn; R20	
xn; R20 Xn; R65	
R10	
Full text of R-phrases: see section 16	
Classification (GHS-US)	
Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:dust,mist)	H332
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT SE 3	H336

Adverse physicochemical, human health and environmental effects

central nervous system.

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P403+P235 - Store in a well-ventilated place. Keep cool

P405 - Store locked up

P501 - Dispose of contents/container to Comply with applicable 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
N-NONANE UNLABELED	(CAS No)111-84-2 (Unlabeled) (EC no)203-913-4	99.993	R10 Xn; R20 Xn; R65 R67
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%)	(CAS No)446255-56-7 (Unlabeled)	0.007	Carc.Cat.1; R45 Carc.Cat.1; R49 Xn; R22 Xi; R41 Xi; R37 Xi; R38 N; R51/53
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-NONANE UNLABELED	(CAS No)111-84-2 (Unlabeled) (EC no)203-913-4	99.993	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%)	(CAS No)446255-56-7 (Unlabeled)	0.007	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1A, H350 STOT SE 3, H336 Aquatic Chronic 2, H411
Name	Product identifier	%	Classification (GHS-US)
N-NONANE UNLABELED	(CAS No)111-84-2 (Unlabeled)	99.993	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336 Asp. Tox. 1, H304

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.		
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. Rinse skin with water/shower. 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	: Immediately call a POISON CENTER or doctor/physician.		

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4.2. Most important symptoms and	effects, both acute and delayed	
Symptoms/injuries after inhalation	: Danger of serious damage to heal inhaled. May cause drowsiness or	th by prolonged exposure through inhalation. Harmful if 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 enter	ers airways.
4.3. Indication of any immediate me	edical attention and special treatment neo	eded
No additional information available		
SECTION 5: Firefighting measur	es	
5.1. Extinguishing media		
suitable extinguishing media	: Use water spray, alcohol-resistant	foam, dry chemical, or carbon dioxide.
5.2. Special hazards arising from th		
Fire hazard	: Flammable liquid and vapor.	
Explosion hazard	: May form flammable/explosive var	por-air mixture.
·		
5.3. Advice for firefighters Protection during firefighting	· Do not ontor fire area without prop	er protective equipment, including respiratory protection.
Frotection during menghting	. Do not enter me area without prop	
SECTION 6: Accidental release r	neasures	
6.1. Personal precautions, protectiv	ve equipment and emergency procedures	5 · · · · · · · · · · · · · · · · · · ·
General measures	: Remove ignition sources. Use spe smoking.	cial care to avoid static electric charges. No naked lights. No
6.1.1. For non-emergency personnel		
No additional information available		
6.1.2. For emergency responders		
Protective equipment	: Avoid breathing dust, mist or spray	I.
	· · · · · · · · · · · · · · · · · · ·	
	do so. Do not let product enter drains. Dis	scharge into the environment must be avoided.
6.3. Methods and material for conta	inment and cleaning up	
No additional information available		
6.4. Reference to other sections		
No additional information available		
SECTION 7: Handling and storage	10	
7.1. Precautions for safe handling		
Additional hazards when processed	: Handle empty containers with care	e because residual vapors are flammable.
Precautions for safe handling		e precautionary measures against static discharge. Use only pors or in a well-ventilated area. Avoid breathing dust, mist or
	spray.	
Hygiene measures	: Wash Both hands thoroughly after	handling.
7.2. Conditions for safe storage, inc	cluding any incompatibilities	
Technical measures		void static electricity should be followed. Ground/bond t. Use explosion-proof electrical equipment.
Storage conditions	: Store at room temperature away fr	
Incompatible materials	: Heat sources.	-
7.3. Specific end use(s)		
No additional information available		
SECTION 8: Exposure controls/p	personal protection	
8.1. Control parameters		
-		
N-NONANE UNLABELED (111-84-2 (Un		200.00000000 ppm Control Notivous Sustant
Italy - Portugal- USA ACGIH ACGIH T		200.0000000000 ppm Central Nervous System impairment.

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8.2. Exposure controls 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. Wear respiratory protection.	

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 comp	onent of this mixture.		
Physical state	: Liquid		
Appearance	: Liquid.		
Molecular mass	: 128.3		
Color	: No data available.		
Odor	: No data available		
Odor threshold	: No data available		
рН	: No data available		
Relative evaporation rate (butyl acetate=1)	: No data available		
Melting point	: -53 °C (- 63 °F) - lit		
Freezing point	: No data available		
Boiling point	: 151 °C (304 °F) - lit		
Flash point	: 31.0 °C (87.8 °F) - closed cup		
Self ignition temperature	: 205 °C (401 °F)		
Decomposition temperature	: No data available		
Flammability (solid, gas)	: Flammable liquid and vapor		
Vapor pressure	: 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F)		
Relative vapor density at 20 °C	: No data available		
Relative density	: No data available		
Solubility	: Water: 0 %		
Log Pow	: 5.65		
Log Kow	: No data available		
Viscosity, kinematic	: No data available		
Viscosity, dynamic	: No data available		
Explosive properties	: No data available		
Oxidizing properties	: No data available		
Explosive limits	: 0.87 - 2.9 % (V)		
9.2. Other information			
Ne additional information available			

SECTI	ON 10: Stability and reactivity	
10.1.	Reactivity	
No addit	ional information available	
10.2.	Chemical stability	
See stor	age and expiration date on CoA.	
10.3.	Possibility of hazardous reactions	
No addi	ional information available	
10.4.	Conditions to avoid	
Open fla	me. Overheating. Direct sunlight. Heat. Sparks.	
10.5.	Incompatible materials	
No additional information available		

EN (English US)

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10.6. Hazardous decomposition products May release flammable gases.			
SECTION 11: Toxicological informati	on		
11.1. Information on toxicological effects			
Acute toxicity	: Harmful if inhaled.		
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12	2, 99%) 50 UG/ML IN NONANE		
ATE (dust, mist)	1.500 mg/l/4h		
N-NONANE UNLABELED (111-84-2 (Unlabele	d))		
LC50 inhalation rat (ppm)	3200 ppm/4h		
ATE (dust, mist)	1.500 mg/l/4h		
Skin corrosion/irritation	: Causes skin irritation.		
Serious eye damage/irritation	: Causes serious eye irritation.		
Respiratory or skin sensitization	: Not classified		
Germ cell mutagenicity	: Not classified		
Carcinogenicity	: Not classified		
Reproductive toxicity	: Not classified		
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.		
Specific target organ toxicity (repeated exposure)	: Not classified		
Aspiration hazard	: May be fatal if swallowed and enters airways.		
Potential Adverse human health effects and symptoms	: Harmful if inhaled.		
Symptoms/injuries after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled. 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	
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12.1. Toxicity

No additional information available

12.2.	Persistence	and degradability
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2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%) (446255-56-7 (Unlabeled))		
Not available.		
N-NONANE UNLABELED (111-84-2 (Unlabeled))		
Not available.		
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%) 50 UG/ML IN NONANE		
5.65		
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%) (446255-56-7 (Unlabeled))		
Not available.		
N-NONANE UNLABELED (111-84-2 (Unlabeled))		
5.65		
Indication of bioaccumulation.		
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%) (446255-56-7 (Unlabeled))		
Not available.		
N-NONANE UNLABELED (111-84-2 (Unlabeled))		
Not available.		

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12.5. Results of PBT and vPvB assessme	ent
No additional information available	
12.6. Other adverse effects	
No additional information available	
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 Local environmental control regulations.
Waste disposal recommendations	: Dispose of contents/container to Comply with applicable 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)	: 1920
DOT NA no.	UN1920
14.2. UN proper shipping name	
DOT Proper Shipping Name	: Nonanes
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)	: III - Minor Danger
DOT Special Provisions (49 CFR 172.102)	 B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T2 - 1.5 178.274(d)(2) Normal
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
14.3 Additional information	
14.3. Additional information Other information ••••••••••••••••••••••••••••••••••••	: No supplementary information available.
	. No supplementary information available.

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Overland transport	
Packing group (ADR)	: W
Class (ADR)	: 3 - Flammable liquid
Hazard identification number (Kemler No.)	: 30
Classification code (ADR)	: F1
Danger labels (ADR)	: 3 - Flammable liquids
	3
Orange plates	30 1920
Tunnel restriction code	: D/E
Limited quantities (ADR)	5L
EAC	: 3Y
Excepted quantities (ADR)	: E1
Transport by sea	
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
MFAG-No	: 128
Air transport	
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
Civil Aeronautics Law	: Flammable liquids
14.4. Environmental hazards	
Other information	: No supplementary information available.
14.5. Special precautions for user	
14.6. Transport in bulk according to Anne	ex II of MARPOL 73/78 and the IBC Code
Not applicable	
SECTION 15: Regulatory information	n and a second
15.1. US Federal regulations	
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C1	2, 99%) 50 UG/ML IN NONANE
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard
N-NONANE UNLABELED (111-84-2 (Unlabel	ed))
SARA Section 311/312 Hazard Classes	Fire hazard
	Immediate (acute) health hazard

15.2. International regulations

CANADA

2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%) 50 UG/ML IN NONANE	
Listed on the Canadian DSL (Domestic Substances List) inventory.	

Immediate (acute) health hazard

15.2.1. National regulations

No additional information available

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15.3. US State regulations	
2,3,3',4,4',5,5',6-OCTABDE (BDE-205) (13C12, 99%)	50 UG/ML IN NONANE()
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.

N-NONANE UNLABELED (111-84-2 (Unlabeled))

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

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::

Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Asp. Tox. 1	Aspiration hazard Category 1
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Flam. Liq. 3	Flammable liquids Category 3
Skin Irrit. 2	skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H226	Flammable liquid and vapor
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H350	May cause cancer
H411	Toxic to aquatic life with long lasting effects
R10	Flammable
R20	Harmful by inhalation
R22	Harmful if swallowed
R37	Irritating to respiratory system
R38	Irritating to skin
R41	Risk of serious damage to eyes
R45	May cause cancer
R49	May cause cancer by inhalation
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R65	Harmful: may cause lung damage if swallowed
R67	Vapors may cause drowsiness and dizziness
N	Dangerous for the environment
Xi	Irritant
Xn	Harmful

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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