

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: 15/12/2015 :

Revision date:

Version: 1.0

1.1. Product id	ntification of the substance/mixture and of	
Product form	: Mixture	
Product name.		INGE SPIKE (13C12, 99%) 50 NG/ML IN NONANE
Product code	: EC-5325	
1.2. Relevant i	lentified uses of the substance or mixture and uses	advised against
	lentified uses	
Industrial/Profession		
	ed against	
No additional information	tion available	
1.3. Details of	he supplier of the safety data sheet	
Cambridge Isotope L	aboratories. Inc.	
50 Frontage Road		
Andover, MA 01810		
USA		
IISA: 1-800-322-11	4 Int: 1-978-749-8000	
cilsales@isotope.cor		
	· ·	
	/ telephone number	
Emergency numbers		
Chemtrec: 1-800-42		
International: 1-703-	741-5970 (24 hours)	
<b>SECTION 2: Ha</b>	ards identification	
2.1. Classifica	ion of the substance or mixture	
Classification acco	ding to Regulation (EC) No. 1272/2008 [CLP]	
Flam. Liq. 3	H226	
Acute Tox. 4 (Inhalat	on) H332	
Skin Irrit. 2	H315	
Eye Irrit. 2	H319	
STOT SE 3	H336	
Asp. Tox. 1	H304	
ASD. LOX. I		

Full text of H-phrases: see section 16

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

Xn; R20 Xn; R65 Xi; R38 R10 Full text of R-phrases: see section 16

#### **GHS-US classification**

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

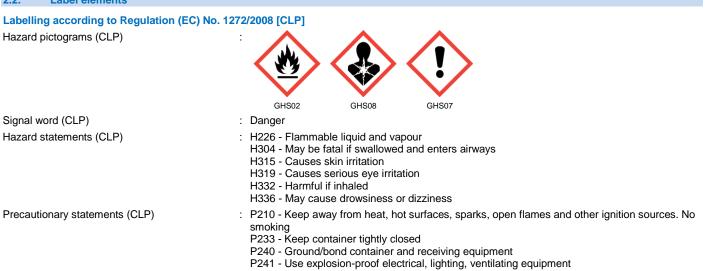
Adverse physicochemical, human health and environmental effects

Central Nervous System.

### 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

#### 2.2. Label elements



- P261 Avoid breathing dust, fume, gas, mist, spray, vapours
- P264 Wash Both hands thoroughly after handling
- P271 Use only outdoors or in a well-ventilated area
- P280 Wear eye protection, face protection, protective clothing, protective gloves

#### **GHS-US** labelling

Hazard pictograms (GHS-US)	$\begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$
Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	<ul> <li>H226 - Flammable liquid and vapour</li> <li>H304 - May be fatal if swallowed and enters airways</li> <li>H315 - Causes skin irritation</li> <li>H319 - Causes serious eye irritation</li> <li>H332 - Harmful if inhaled</li> <li>H336 - May cause drowsiness or dizziness</li> </ul>
Precautionary statements (GHS-US)	<ul> <li>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 dust, fume, gas, mist, spray, vapours P264 - Wash Both hands thoroughly after handling P271 - Use only outdoors or in a well-ventilated area 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 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P312 - Call a POISON CENTER/doctor/physician if you feel unwell P321 - Specific treatment (see Hazard pictograms (CLP) on this label) P331 - If swallowed, do NOT induce vomiting P332+P313 - If skin irritation occurs: Get medical advice/attention P337+P313 - If eye irritation persists: Get medical advice/attention P337+P313 - If get intritation persists: Get medical advice/attention P332+P33 - In case of fire: Use Alcohol resistant foam, Carbon dioxide., Dry chemical, Water spray for extinction P403+P233 - Store in a well-ventilated place. Keep container tightly closed P403+P233 - Store in a well-ventilated place. Keep cool P405 - Store locked up</li> </ul>

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according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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. Mixture		1	
Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.999972	R10 Xn; R20 Xn; R65 R67 Xi; R38
2,2',3,3',5,5',6-HEPTACB (PCB-178) (13C12, 99%)	(CAS No) 232919-67-4 (EC index no) 602-039-00-4	0.000007	N; R50/53 Xn; R21/22
2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%)	(CAS No) 208263-66-5 (EC index no) 602-039-00-4	0.000007	Xn; R48/20/21/22 N; R50/53 R33
2,3',4',5-TETRACB (PCB-70) (13C12, 99%)	(CAS No) 208263-81-4 (EC index no) 602-039-00-4	0.000007	N; R50/53 R33 R48
2,3,3',5,5'-PENTACB (PCB-111) (13C12, 99%)	(CAS No) 235416-29-2 (EC index no) 602-039-00-4	0.000007	Xn; R48/20/21/22 N; R50/53 R33
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.999972	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H336 Asp. Tox. 1, H304
2,2',3,3',5,5',6-HEPTACB (PCB-178) (13C12, 99%)	(CAS No) 232919-67-4 (EC index no) 602-039-00-4	0.000007	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,2',3,4,4',5'-HEXACB (PCB-138) (13C12, 99%)	(CAS No) 208263-66-5 (EC index no) 602-039-00-4	0.000007	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2,3',4',5-TETRACB (PCB-70) (13C12, 99%)	(CAS No) 208263-81-4 (EC index no) 602-039-00-4	0.000007	STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
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Name	Product identifier	%	GHS-US classification
N-NONANE UNLABELED	(CAS No) 111-84-2	99.999972	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation:vapour), 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	: Move out of dangerous area. Consult a physician and show this safety data sheet.

### NONANE EC-5325

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First-aid measures after inhalation	rding to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations : 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	<ul> <li>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).</li> </ul>
First-aid measures after eye contact	<ul> <li>Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.</li> </ul>
First-aid measures after ingestion	: Immediately call a POISON CENTER or doctor/physician.
4.2. Most important symptoms and ef	fects, 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 medi	ical attention and special treatment needed
No additional information available	
SECTION 5: Firefighting measures	3
5.1. Extinguishing media	
Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
5.2. Special hazards arising from the	substance or mixture
Fire hazard	: Flammable liquid and vapour.
Explosion hazard	: May form flammable/explosive vapour-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 me	
	easures
6.1. Personal precautions, protective	equipment and emergency procedures
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16/12/2015

: Store at room temperature away from light and moisture.

### NONANE EC-5325

### 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

Incompatible materials	: Heat sources.	
7.3. Specific end use(s)		
No additional information available		
SECTION 8: Exposure controls/pe	ersonal protection	
8.1. Control parameters		
MODIFIED JIS PCB SYRINGE SPIKE (130	C12, 99%) 50 NG/ML IN NONANE	
Italy - Portugal - USA ACGIH ACGIH TW	A (ppm)	200.0000000000 ppm Central Nervous System impairment.
N-NONANE UNLABELED (111-84-2)		
Italy - Portugal - USA ACGIH ACGIH TW		200.0000000000 ppm Central Nervous System impairment.
8.2. Exposure controls		
Personal protective equipment	: Protective clothing. Protective goggles.	Self-contained breathing apparatus. Gloves.
Hand protection	: Wear suitable protective clothing and gl	oves.
Eye protection	: Wear safety glasses with side shields (c	or goggles) and a face shield.
Skin and body protection	: Wear suitable protective clothing.	
Respiratory protection	: Where exposure through inhalation may recommended. Wear respiratory protect	/ occur from use, respiratory protection equipment is tion.
<b>SECTION 9: Physical and chemic</b>	al properties	
9.1. Information on basic physical ar	d chemical properties	
The properties listed below are for the solvent, the main con		
Physical state	: Liquid	
Appearance	: Liquid.	
Molecular mass	: 128.3 g/mol	
Colour	: Colourless.	
Odour	: No data available	
Odour threshold	: No data available	
рН	: No data available	
Relative evaporation rate (butylacetate=1)	: No data available	
Melting point	: No data available	
Freezing point	: -53 °C (- 63 °F) - lit	
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)

Relative vapour density at 20 °C

Vapour pressure

Relative density

Viscosity, kinematic

Viscosity, dynamic Explosive properties

Oxidising properties

Explosive limits

Density

Solubility

Log Pow

Log Kow

: Flammable liquid and vapour

: No data available

: No data available

: No data available

: No data available : No data available

: No data available

: No data available

: 0.87 - 2.9 % (V)

: 0.718 g/ml

: Water: 0 %

: 5.65

: 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F)

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9.2. Other information	
No additional information available	
<b>SECTION 10: Stability and reactivity</b>	
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. Overheating. Direct sunlight. Heat.	Sparks.
10.5. Incompatible materials	
Strong oxidizing agents.	
10.6. Hazardous decomposition products	
May release flammable gases.	
SECTION 11: Toxicological informat	ion
11.1. Information on toxicological effects	
Acute toxicity	: Harmful if inhaled.
MODIFIED JIS PCB SYRINGE SPIKE (13C12)	
LC50 inhalation rat (mg/l)	23760 mg/m <sup>3</sup> male - 4 h
LC50 inhalation rat (ppm) ATE (gases)	3200 ppm/4h 4500.000 ppmV/4h
ATE (gases) ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	1.500 mg/l/4h
N-NONANE UNLABELED (111-84-2) LC50 inhalation rat (mg/l)	23760 mg/m <sup>3</sup> male - 4 h
LC50 inhalation rat (ppm)	3200 ppm/4h
ATE (gases)	3200.000 ppmV/4h
ATE (vapours)	11.000 mg/l/4h
ATE (dust,mist)	23.760 mg/l/4h
2,2',3,3',5,5',6-HEPTACB (PCB-178) (13C12,	99%) (232919-67-4)
ATE (oral)	500.000 mg/kg bodyweight
ATE (dermal)	1100.000 mg/kg bodyweight
Skin corrosion/irritation	: Causes skin irritation.
	Skin - rat - Skin irritation - Draize test
Serious eye damage/irritation	: Causes serious eye irritation.
	No data available
Respiratory or skin sensitisation	: Not available
	No data available
Germ cell mutagenicity	: Not available
Carcinogenicity	: Not classified
Reproductive toxicity	: Not available
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
	May cause drowsiness or dizziness.
Specific target organ toxicity (repeated	: Not classified
exposure)	No data available
Aspiration hazard	: May be fatal if swallowed and enters airways.
Potential Adverse human health effects and symptoms	: 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.
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Symptoms/injuries after ingestion

: May be fatal if swallowed and enters airways.

SECTION 12: Ecological information	
12.1. Toxicity	
No additional information available	
12.2. Persistence and degradability	
No additional information available	
12.3. Bioaccumulative potential	
MODIFIED JIS PCB SYRINGE SPIKE (13C12,	99%) 50 NG/ML IN NONANE
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.
N-NONANE UNLABELED (111-84-2)	
Log Pow	5.65
Bioaccumulative potential	Indication of bioaccumulation.
12.4. Mobility in soil	
No additional information available	
12.5. Results of PBT and vPvB assessmer	nt
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 disposa
	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
CECTION 42. Dispacel consideration	
SECTION 13: Disposal consideration	S
13.1. Waste treatment methods	. Weste meteriale should be disposed of upday and diana which must Federal. Otate, and least
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 vapours are flammable.
Ecology - waste materials	: Hazardous waste due to toxicity.
SECTION 14: Transport information	
In accordance with ADR / RID / ADNR / IMDG / I	CAO / 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	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Classes	
Hazard labels (DOT)	: 3 - Flammable liquid
Packing group (DOT)	: III - Minor Danger

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	<ul> <li>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.</li> <li>IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HD2, 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).</li> <li>T2 - 1.5 178.274(d)(2) Normal</li></ul>
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	
Other information	: No supplementary information available.
Overland transport	
Packing group (ADR)	: III
Class (ADR)	: 3 - Flammable liquids
Hazard identification number (Kemler No.)	: 30
Classification code (ADR)	: F1
Danger labels (ADR)	: 3 - Flammable liquids
Orange plates	· 30
	1920
Tunnel restriction code	: D/E
Limited quantities (ADR)	5L
EAC code	: 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(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)
14.4. Environmental hazards	
Other information	: No supplementary information available.
14.5. Special precautions for user	

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SECTION 15: Regulatory information		
15.1. US Federal regulations		
MODIFIED JIS PCB SYRINGE SPIKE (13C12, 99%) 50 NG/ML IN NONANE		
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard	
N-NONANE UNLABELED (111-84-2)		
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard	

#### 15.2. International regulations

#### **CANADA**

MODIFIED JIS PCB SYRINGE SPIKE (13C12, 99%) 50 NG/ML IN NONANE	
Listed on the Canadian DSL (Domestic Sustances List) inventory.	

#### **National regulations** 15.2.1.

No additional information available

15.3. US State regulations		
MODIFIED JIS PCB SYRINGE SPIKE (13C12, 99%) 50 NG/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)

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 (Dermal)	Acute toxicity (dermal), Category 4	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4	
Acute Tox. 4	Acute toxicity (inhalation:vapour) Category 4	
(Inhalation:vapour)		
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4	
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	
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	
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2	
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis	
H226	Flammable liquid and vapour	
H302	Harmful if swallowed	
H304	May be fatal if swallowed and enters airways	
H312	Harmful in contact with skin	
H315	Causes skin irritation	
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H319	Causes serious eye irritation
H332	Harmful if inhaled
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
R10	Flammable
R20	Harmful by inhalation
R21/22	Harmful in contact with skin and if swallowed
R33	Danger of cumulative effects
R38	Irritating to skin
R48	Danger of serious damage to health by prolonged exposure
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
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