

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: 17/04/2015 :

Revision date:

Version: 1.0

### CLM-9282-S

1.1. Product identifier	n of the substance/mixture and of the company/undertaking
Product form	: Mixture
Product name.	: DECHLORANE 602 (CP >97%) 100 UG/ML IN NONANE (1,2,3,4,6,7,8,9,10,11-13C10, 99%
Product code	: CLM-9282-S
1.2. Relevant identified us	es of the substance or mixture and uses advised against
1.2.1. Relevant identified us	es
Industrial/Professional use spec	: For professional use only.
1.2.2. Uses advised against	
No additional information availab	
1.3. Details of the supplie	r of the safety data sheet
Cambridge Isotope Laboratories,	
50 Frontage Road	
Andover, MA 01810	
USA	
USA: 1-800-322-1174 Int: 1-97 cilsales@isotope.com www.isc	8-749-8000 tope.com
Emergency telephone	·
Emergency numbers:	
• •	hauma)
Chemtrec: 1-800-424-9300 (24 International: 1-703-741-5970 (2	
SECTION 2: Hazards ide	atification
2.1. Classification of the s	
	gulation (EC) No. 1272/2008 [CLP]
Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:dust,mis	
Skin Irrit. 2	H315
Eye Irrit. 2	H319
STOT SE 3	H336
Asp. Tox. 1	H304
Full text of H-phrases: see sectio	n 16
Classification according to Dire	ective 67/548/EEC or 1999/45/EC
Xn; R20	
Xn; R65	
R10	
Full text of R-phrases: see sectio	n 16
GHS-US classification	
Flam. Liq. 3	H226
Acute Tox. 4 (Inhalation:dust,mis	
Skin Irrit. 2	H315
Eye Irrit. 2A	H319
STOT SE 3	H336

Adverse physicochemical, human health and environmental effects Central Nervous System.

H304

Asp. Tox. 1

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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. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
N-NONANE UNLABELED	(CAS No) 111-84-2 (EC no) 203-913-4	99.9861	R10 Xn; R20 Xn; R65 R67 Xi; R38
DECHLORANE 602 (CHEMICAL PURITY >97%) (1,2,3,4,6,7,8,9,10,11-13C10, 99%)	(CAS No) 31107-44-5 (Unlabeled)	0.0139	Not classified
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	99.9861	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
DECHLORANE 602 (CHEMICAL PURITY >97%) (1,2,3,4,6,7,8,9,10,11-13C10, 99%)	(CAS No) 31107-44-5 (Unlabeled)	0.0139	Not classified
Name	Product identifier	%	GHS-US classification
N-NONANE UNLABELED	(CAS No) 111-84-2	99.9861	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	: Call a POISON CENTER or doctor/physician.
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.
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.
4.2. Most important symptoms and ef	fects, both acute and delayed
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.
4.3. Indication of any immediate medi	cal attention and special treatment needed
No additional information available	
<b>SECTION 5: Firefighting measures</b>	
5.1. Extinguishing media	
Suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

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5.2. Special hazards aris	sing 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 firefighte	ers
Firefighting instructions	: Use water spray to cool unopened containers.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
<b>SECTION 6: Accidental</b>	release measures
	ns, protective 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	: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate
Emergency procedures	ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapour accumulating to form explosive concentrations. Vapours can accumulate in low areas.
6.1.2. For emergency resp	oonders
No additional information availa	
6.2. Environmental prec	
	age if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
	ial for containment and cleaning up
For containment	: Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.
6.4. Reference to other	sections
No additional information availa	able
<b>SECTION 7: Handling a</b>	nd storage
7.1. Precautions for safe	e handling
Additional hazards when proce	ssed : Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling	: No naked lights. No smoking. Take precautionary measures against static discharge. 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. Use explosion-proof electrical equipment.
Storage conditions	: Store refrigerated (-5 C to 5 C). Protect from light.
Incompatible materials	: Heat sources.
7.3. Specific end use(s)	
No additional information availa	able
<b>SECTION 8: Exposure of</b>	controls/personal protection
8.1. Control parameters	
	11_94_2)
N-NONANE UNLABELED (1 Italy - Portugal - USA ACGIH	
	impairment.
9.0 Emergence (a)	
8.2. Exposure controls	· Clause Distantive electrics Distantive seconder Self contained by othing another
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.
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: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear respiratory protection.

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Respiratory protection	: Where exposure through inhalation may oc recommended. Wear respiratory protection
<b>SECTION 9: Physical and chemical</b>	properties
9.1. Information on basic physical and	chemical properties
The properties listed below are for the solvent, the main compo	onent of this mixture.
Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 128.3 g/mol
Colour	: Colourless.
Odour	: No data available
Odour threshold	: No data available
pH	: 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)	: Flammable liquid and vapour
Vapour pressure	: 12.4 hPa (9.3 mmHg) at 37.7 °C (99.9 °F)
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.718 g/ml
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
Oxidising properties	: No data available

## 9.2. Other information

Explosive limits

No additional information available

SECT	ION 10: Stability and reactivity		
10.1.	Reactivity		
Vapors	Vapors may form explosive mixture with air.		
10.2.	Chemical stability		
See sto	rage and expiration date on CoA.		
10.3.	Possibility of hazardous reactions		
No add	tional information available		
10.4.	Conditions to avoid		
Open fl	ame. Overheating. Direct sunlight. Heat. Sp	parks.	
10.5.	Incompatible materials		
Strong	Strong oxidizing agents.		
10.6.	Hazardous decomposition products		
May rel	ease flammable gases.		
SECTION 11: Toxicological information			
11.1.	Information on toxicological effects		
Acute to	oxicity	: Harmful if inhaled.	
DECHLORANE 602 (CP >97%) 100 UG/ML IN NONANE (1,2,3,4,6,7,8,9,10,11-13C10, 99%)			
LC50	inhalation rat (mg/l)	23760 mg/m <sup>3</sup> male - 4 h	

: 0.87 - 2.9 % (V)

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DECHLORANE 602 (CP >97%) 100 UG/ML IN NONANE (1,2,3,4,6,7,8,9,10,11-13C10, 99%)		
LC50 inhalation rat (ppm)	3200 ppm/4h	
ATE (gases)	3200.000 ppmV/4h	
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	
DECHLORANE 602 (CHEMICAL PURITY >97	%) (1,2,3,4,6,7,8,9,10,11-13C10, 99%) (31107-44-5 (Unlabeled))	
LD50 oral rat	> 25 mg/kg	
LD50 dermal rabbit	> 8 mg/kg	
LC50 inhalation rat (mg/l)	> 2250 mg/m <sup>3</sup>	
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	: 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		
12.1. Toxicity		
DECHLORANE 602 (CHEMICAL PURITY >97%	) (1,2,3,4,6,7,8,9,10,11-13C10, 99%) (31107-44-5 (Unlabeled))	
LC50 fishes 1	> 100 mg/l Bluegill sunfish - 96 h	
12.2. Persistence and degradability		
DECHLORANE 602 (CHEMICAL PURITY >97%	) (1,2,3,4,6,7,8,9,10,11-13C10, 99%) (31107-44-5 (Unlabeled))	
Persistence and degradability Persistent in the environment.		
12.3. Bioaccumulative potential		
DECHLORANE 602 (CP >97%) 100 UG/ML IN N	IONANE (1,2,3,4,6,7,8,9,10,11-13C10, 99%)	
Log Pow	5.65	
Bioaccumulative potential	Indication of bioaccumulation.	
N-NONANE UNLABELED (111-84-2)		
Log Pow	5.65	
Bioaccumulative potential	Indication of bioaccumulation.	

SECTION 42. Easle

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	%) (1,2,3,4,6,7,8,9,10,11-13C10, 99%) (31107-44-5 (Unlabeled))
Bioaccumulative potential	If released in water, this material is expected to preferentially absorb to sediment. The photodegradation half-life is over 24 years. The material is resistant to biodegradation by aerobic and anaerobic bacteria.
2.4. Mobility in soil	
DECHLORANE 602 (CHEMICAL PURITY >97	%) (1,2,3,4,6,7,8,9,10,11-13C10, 99%) (31107-44-5 (Unlabeled))
Ecology - soil	Not available.
2.5. Results of PBT and vPvB assessme	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 disposed Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environmer
SECTION 13: Disposal consideratior	15
I3.1. 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 vapours are flammable.
Ecology - waste materials	: Hazardous waste due to toxicity.
SECTION 14: Transport information	
n accordance with ADR / RID / ADNR / IMDG / I	CAO / IATA
4.1. UN number	
UN-No.(DOT)	: 1920
DOT NA no.	UN1920
I4.2. 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) DOT Special Provisions (49 CFR 172.102)	<ul> <li>III - Minor Danger</li> <li>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.</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 liquic with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 5 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Tabl 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) DOT Packaging Bulk (49 CFR 173.xxx)	: 203 : 242
14.3. Additional information	
Other information	: No supplementary information available.
Overland transport	
Packing group (ADR)	: 111
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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 Enforcemen Regulations)
14.4. Environmental hazards	
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	
DECHLORANE 602 (CP >97%) 100 UG/ML IN	NONANE (1.2.3.4.6.7.8.9.10.11-13C10. 99%)

### 15.2.1. National regulations

15.2. International regulations

No additional information available

SARA Section 311/312 Hazard Classes

N-NONANE UNLABELED (111-84-2) SARA Section 311/312 Hazard Classes

CANADA

Fire hazard

Fire hazard

DECHLORANE 602 (CP >97%) 100 UG/ML IN NONANE (1,2,3,4,6,7,8,9,10,11-13C10, 99%)

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

Immediate (acute) health hazard

Immediate (acute) health hazard

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### 15.3. US State regulations

### DECHLORANE 602 (CP >97%) 100 UG/ML IN NONANE (1,2,3,4,6,7,8,9,10,11-13C10, 99%)()

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 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 4
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 SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
R10	Flammable
R20	Harmful by inhalation
R38	Irritating to skin
R65	Harmful: may cause lung damage if swallowed
R67	Vapours may cause drowsiness and dizziness
Xi	Irritant
Xn	Harmful

NFPA health hazard	<ul> <li>2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.</li> </ul>	3
NFPA fire hazard	: 3 - Liquids and solids that can be ignited under almost all ambient conditions.	2 0
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