

#### Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 31/03/2017 Date of issue: 09/12/2010

CLM-551

Supersedes: 20/10/2016

Version: 4.0

SECTION 1: Identification of the	substance/mixture and of the company/undertaking						
1.1. Product identifier							
Product form	: Substance						
Substance name	: ETHANOL (1,2-13C2, 99%) (<6% H2O)						
EC Index No	: 603-002-00-5 (Unlabeled)						
EC No	: 200-578-6 (Unlabeled)						
CAS No	: 70753-79-6						
Product code	: CLM-551						
Formula	: *CH3*CH2OH						
Synonyms	: Absolute alcohol						
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						
1.2.2. Uses advised against							
No additional information available							
1.3. Details of the supplier of the safety 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: 1-703-741-5970 (24 hours)							
SECTION 2: Hazards identification	bn						
2.1. Classification of the substance	or mixture						
Classification according to Regulation (E	EC) No. 1272/2008 [CLP]						
Flam. Liq. 2 H225							
Skin Irrit. 2 H315							
Eye Irrit. 2 H319							
STOT SE 3 H335							
Full text of hazard classes and H-statement	s : see section 16						
Classification according to Directive 67/5	548/EEC [DSD] or 1999/45/EC [DPD]						
F; R11							

Xi; R36/37/38 Full text of R-phrases: see section 16

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

Flam. Liq. 2 H225 Skin Irrit. 2 H315 Eye Irrit. 2 H319 STOT SE 3 H335 Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations



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

P405 - Store locked up

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>SECTION 3: Composition/information</b>	n on ingredients		
3.1. Substances			
Name	Product identifier	%	Classification according to Directive 67/548/EEC
ETHANOL (1,2-13C2, 99%) (<6% H2O)	(CAS No) 70753-79-6 (EC No) 200-578-6 (Unlabeled) (EC Index No) 603-002-00-5 (Unlabeled)	100	F; R11 Xi; R36/37/38
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ETHANOL (1,2-13C2, 99%) (<6% H2O)	(CAS No) 70753-79-6 (EC No) 200-578-6 (Unlabeled) (EC Index No) 603-002-00-5 (Unlabeled)	100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

#### Full text of R- and H-statements: see section 16

Name	Product identifier	%	GHS-US classification
ETHANOL (1,2-13C2, 99%) (<6% H2O) (Main constituent)	(CAS No) 70753-79-6	100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of H-statements: see section 16

Not applicable	3.2.	Mixtures	res																																	
	Not app	olicable																																		

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention. Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Wash skin with plenty of water. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label).
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.
4.2. Most important symptoms and effects	s, both acute and delayed
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

: Water spray. dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).
ibstance or mixture
: Highly flammable liquid and vapour.
: May form flammable/explosive vapour-air mixture.
<ul> <li>Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.</li> </ul>
: Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.
: Use water spray to cool unopened containers.

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

, 5	
<b>SECTION 6: Accidental release mea</b>	sures
6.1. Personal precautions, protective ed	quipment and emergency procedures
General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.
6.1.1. For non-emergency personnel Emergency procedures	: Avoid breathing vapours, mist, gas. Avoid dust formation.
6.1.2. For emergency responders No additional information available	
6.2. Environmental precautions	
Prevent entry to sewers and public waters. Do r	not allow to enter drains or water courses. Avoid release to the environment.
6.3. Methods and material for containm	ent and cleaning up
For containment	: Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Comply with local regulations for disposal. Stop leak without risks if possible. Contain large spillage with sand or earth.
6.4. Reference to other sections	
No additional information available	
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	: Provide adequate ventilation to minimize dust and/or vapour concentrations. No open flames. No smoking. Use only non-sparking tools. Avoid breathing fume, gas, mist, spray, vapours. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling.
7.2. Conditions for safe storage, includ	ing any incompatibilities
Technical measures	: Store in a well-ventilated place. Keep container tightly closed. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof ventilating equipment.
Storage conditions	: Store at room temperature away from light and moisture.
Incompatible materials	: Heat sources.
7.3. Specific end use(s)	
No additional information available	

No additional information available

#### SECTION 8: Exposure controls/personal protection

ETHANOL (1,2-13C2, 99%) (<		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	1000.00000000 ppm Remarks:Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans; USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	1000 ppm Remarks: Upper Respiratory Tract irritation, Confirmed animal carcinogen with unknown relevance to humans ; USA. ACGIH Threshold Limit Values (TLV)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1900 USA. NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm USA. NIOSH Recommended Exposure Limits
USA OSHA	OSHA PEL (TWA) (mg/m³)	1900 mg/m <sup>3</sup> The value in mg/m3 is approximate ;USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

Appropriate engineering controls

: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal protective equipment	: Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.
Materials for protective clothing	: Wear suitable protective clothing and gloves.
Hand protection	: Wear suitable protective clothing and gloves.
Eye protection	: Wear eye protection. Chemical goggles or face shield with safety glasses.
Skin and body protection	: Wear suitable protective clothing, gloves and eye/face protection. Wear suitable protective clothing.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
Environmental exposure controls	: Avoid release to the environment.
SECTION 9: Physical and chemic	cal properties

#### 9.1. Information on basic physical and chemical properties Physical state : Liquid Appearance : Liquid. Molecular mass : 48.05 g/mol (Labeled) : Colourless. Colour Odour No data available. : Odour threshold No data available : No data available pН Relative evaporation rate (butylacetate=1) : No data available Melting point : -143.99 °C (-227.18 °F) Freezing point : No data available Boiling point : 78 - 80 °C (172.4 - 176.0 °F) : 14 °C (57.2 °F) - closed cup Flash point Auto-ignition temperature : 363 °C (685.4 °F) Decomposition temperature : No data available Flammability (solid, gas) : Highly flammable liquid and vapour Vapour pressure : 59.5 hPa (44.6 mmHg) at 20.0 °C (68.0 °F) Relative vapour density at 20 °C : No data available Relative density : No data available Density : 0.7974 g/ml Solubility : Water: completely soluble Log Pow : -0.349 at 24 °C (75 °F) Log Kow : No data available : No data available Viscosity, kinematic Viscosity, dynamic : No data available Explosive properties : No data available Oxidising properties : No data available Explosive limits : 3.3 - 19 vol %

#### 9.2. **Other information**

No	additional	information	available
110	adultional	mornauon	available

SECTI	ON 10: Stability and reactivity	
10.1.	Reactivity	
No addit	ional information available	
10.2.	Chemical stability	
Stable if	stored under recommended conditions.	
10.3.	Possibility of hazardous reactions	
Vapours	may form explosive mixture with air.	
10.4.	Conditions to avoid	
Open fla	me. Direct sunlight. Heat. Sparks.	
10.5.	Incompatible materials	
Strong o	xidizing agents. Alkali metals. Peroxides.	
24/02/204	7	E /0

EN (English)

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.6. Hazardous decomposition products	
Carbon oxides (CO, CO2). May release flammable	e gases.
SECTION 11: Toxicological information	on
11.1. Information on toxicological effects	
Acute toxicity	: Not classified
ETHANOL (1,2-13C2, 99%) (<6% H2O) (70753-	79-6)
LD50 oral rat	10470 mg/kg
LD50 dermal rabbit	15800 mg/kg
LC50 inhalation rat (mg/l)	30000 mg/l/4h
Skin corrosion/irritation	: Skin. rabbit. No skin irritation. 24 Hours. (OECD 404 method)
Serious eye damage/irritation	: Eyes. rabbit. moderate eye irritation. (OECD 405 method)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Carcinogenicity. mouse. oral. Tumorigenic: Carcinogenic by RTECS criteria. Liver: Tumors. blood
Reproductive toxicity	: Reproductive toxicity. Reproductive toxicity - Human - female - Oral Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: CNS depression. Narcosis. Damage to heart. Stomach - Irregularities - Based on Human Evidence. 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.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

SECTION 12: Ecological information		
12.1. Toxicity		
ETHANOL (1,2-13C2, 99%) (<6% H2O) (70753-79-6)		
14200 mg/l - Pimephales promelas (fathead minnow) - 96 h		
5012 mg/l - Ceriodaphnia dubia (water flea) - 48 h		
ErC50 (algae) 275 mg/l - Chlorella vulgaris (Fresh water algae) - 72 h (OECD Test Guideline 201)		
NOEC (chronic) 9.6 mg/l - Daphnia magna (Water flea) - 9 d		

12.2.	Persistence and degradability		
ETHANOL (1,2-13C2, 99%) (<6% H2O) (70753-79-6)			
Biodeg	Biodegradation 95 % Result: - Readily biodegradable		
12.3.	Bioaccumulative potential		
ETHA	NOL (1,2-13C2, 99%) (<6% H2O) (70753-	79-6)	
Log Po	W	-0.349 at 24 °C (75 °F)	
Bioaccumulative potential Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.			
12.4.	Mobility in soil		
No addi	tional information available		
12.5.	Results of PBT and vPvB assessment		
No addi	tional information available		
12.6.	Other adverse effects		
Other adverse effects : Toxic to aquatic life with long lasting effects. Avoid release to the environment.			

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>SECTION 13: Disposal consideration</b>	IS
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.
Product/Packaging disposal recommendations:	: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Ecology - waste materials	: Dispose of as unused product.
<b>SECTION 14: Transport information</b>	
In accordance with ADR / RID / IMDG / IATA / A	DN
14.1. UN number	
UN-No.(DOT) DOT NA no.	: 1170 UN1170
14.2. UN proper shipping name	
Proper Shipping Name (DOT)	: Ethyl alcohol solutions
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT)	: 3 - Flammable liquid
	FLAMMABLE LIQUID
Packing group (DOT) DOT Special Provisions (49 CFR 172.102)	<ul> <li>II - Medium Danger</li> <li>24 - Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.</li> <li>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.</li> <li>T4 - 2.65 178.274(d)(2) Normal</li></ul>
DOT Packaging Exceptions (49 CFR 173.xxx) DOT Packaging Non Bulk (49 CFR 173.xxx)	: 4b;150 : 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
14.3. Additional information	
Emergency Response Guide (ERG) Number	: 127
Other information	: No supplementary information available.
Special transport precautions	: Not classified as dangerous in the meaning of transport regulations.
Overland transport Packing group (ADR) Class (ADR) Hazard identification number (Kemler No.) Classification code (ADR) Danger labels (ADR)	<ul> <li>II</li> <li>3 - Flammable liquid</li> <li>33</li> <li>F1</li> <li>3 - Flammable liquids</li> </ul>
Orange plates Tunnel restriction code (ADR)	2 33 1170 : D/E
21/02/2017	EN (English) 7/0

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Limited quantities (ADR)	1
, ,	
Excepted quantities (ADR)	: E2
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	: 127
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
14.4. Environmental hazards	
Other information	: No supplementary information available.
14.5. Special precautions for user	
Special transport precautions	: Not classified as dangerous in the meaning of transport regulations.

## 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

SECTION 15: Regulatory information		
15.1. US Federal regulations		
ETHANOL (1,2-13C2, 99%) (<6% H2O) (70753-79-6)		
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporing requirements of the United States SARA Section 302.	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard	
SARA Section 313 - Emission Reporting	Not subject to reporing requirements of the United States SARA Section 313.	

#### 15.2. International regulations

# ETHANOL (1,2-13C2, 99%) (<6% H2O) (70753-79-6)</th> Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

#### 15.3. US State regulations

ETHANOL (1,2-13C2, 99%) (<6% H2O)(70753-79-6)	
U.S California - Proposition 65 - Carcinogens List	No
U.S California - Proposition 65 - Developmental Toxicity	No
U.S California - Proposition 65 - Reproductive Toxicity - Female	No
U.S California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S Massachusetts - Right To Know List U.S New Jersey - Right to Know Hazardous Substance List U.S Pennsylvania - RTK (Right to Know) List

#### **SECTION 16: Other information**

### Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Othe	r 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 t	ext of R-, H- an	d EUH-statements:
	Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
	Elam Lig 2	Elammable liquids. Category 2

Full text of R-	H- and EUH-statemen	ts:
T UN LOAL OF IX,		1.5.

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2	
Flam. Liq. 2	Flammable liquids, Category 2	
Skin Irrit. 2	Skin corrosion/irritation, Category 2	
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	
H225	Highly flammable liquid and vapour	
H315	Causes skin irritation	
H319	Causes serious eye irritation	
H335	May cause respiratory irritation	
R11	Highly flammable	
R36/37/38	Irritating to eyes, respiratory system and skin	
F	Highly flammable	
Xi	Irritant	

NFPA health hazard

NFPA fire hazard

NFPA reactivity

: 2 - Materials that, under emergency conditions, can cause
temporary incapacitation or residual injury.

- : 3 Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
- : 0 Material that in themselves are normally stable, even under fire conditions.



#### **HMIS III Rating**

Health	:	2 Moderate Hazard - Temporary or minor injury may occur
Flammability	:	3 Serious Hazard
Physical	:	0 Minimal Hazard

CIL Multi-Solvent 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