

## 1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	<b>LIQUICELL MEMBRANES</b>
1.2	Chemical Name:	NA
1.3	Synonyms:	94201, 94204, 94310, 94211, 94212
1.4	Trade Names:	Liquicell Oval Membranes; CPAP Cushions; Liquicell Membrane; Shear Reducing Interface
1.5	Product Use:	Reduce shear and friction of the skin
1.6	Distributor's Name:	Birchwood Laboratories LLC
1.7	Distributor's Address:	7900 Fuller Road, Eden Prairie, MN 55344 USA
1.8	Emergency Phone:	<b>ChemTrec +1 (800) 424-9300 / +1 (703) 527-3887 or Poison Control Center +1 (855) 281-1742</b>
1.9	Business Phone / Fax:	+1 (952) 937-7968 / +1 (952) 937-7979

## 2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	<p>This product is classified as a hazardous substance but NOT as dangerous goods according to the classification criteria of [NOHSC: 1088 (2004)] and ADG Code (Australia).</p> <p><b>WARNING! CAUSES SERIOUS EYE IRRITATION.</b></p> <p><u>Classification:</u> Eye Irrit. 2</p> <p><u>Hazard Statements (H):</u> H319 – Causes serious eye irritation.</p> <p><u>Precautionary Statements (P):</u> P264 – Wash thoroughly with soap and water after handling. P280 – Wear eye protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 - If eye irritations persist: Get medical advice/attention.</p>	
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## 3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m <sup>3</sup> )									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
	TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	TLV	STEL	IDLH						
POLYDIMETHYLSILOXANE	63148-62-9	JT6484500	213-915-7	60-100	NA	NA	NF	NF	NF	NA	NA	NA	Eye Irrit. 2; H319	
WHITE PAPER ENCLOSURE	NA	NA	NA	NA	NA	NA	NF	NF	NF	NA	NA	NA		

## 4. FIRST AID MEASURES

4.1	First Aid:	<p><u>Ingestion:</u> <b>DO NOT INDUCE VOMITING.</b> Contact POISON CONTROL +1 (855) 281-1742 or the nearest or local emergency telephone number for assistance and instructions. Seek immediate medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.</p> <p><u>Eyes:</u> Flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If irritation persists, seek immediate medical attention.</p> <p><u>Skin:</u> Remove contaminated clothing and wash affected areas with soap and water. If irritation persists, seek prompt medical attention. Do not wear contaminated clothing until after it has been properly cleaned.</p> <p><u>Inhalation:</u> Remove victim to fresh air at once. If breathing is difficult, administer supplemental oxygen and seek immediate medical attention. If breathing stops, perform artificial respiration.</p>													
4.2	Effects of Exposure:	<p><u>Ingestion:</u> If product is swallowed, may cause nausea, vomiting and/or diarrhea and general digestive system discomfort.</p> <p><u>Eyes:</u> Irritating to the eyes, if Liquicell is ruptured.</p> <p><u>Skin:</u> Product is applied to skin to reduce shear and friction of the skin. May be irritating to skin in some sensitive individuals, especially after prolonged and/or repeated contact.</p> <p><u>Inhalation:</u> Unlikely.</p>													
4.3	Symptoms of Overexposure:	Symptoms of skin overexposure may include redness, itching, and irritation of affected areas. Overexposure in eyes may cause redness, itching and watering.													
4.4	Acute Health Effects:	Redness, itching, and irritation of skin at the site of contact for some sensitive individuals.													
4.5	Chronic Health Effects:	No chronic health effects are known, although symptoms and discomfort may occur for several days following overexposure following ingestion													
4.6	Target Organs:	Eyes, skin													
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system) or impaired kidney function may be more susceptible to the effects of this substance.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #0000FF; color: white;"><b>HEALTH</b></td> <td style="text-align: center;"><b>0</b></td> </tr> <tr> <td style="background-color: #FF0000; color: white;"><b>FLAMMABILITY</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td style="background-color: #FFA500; color: white;"><b>PHYSICAL HAZARDS</b></td> <td style="text-align: center;"><b>0</b></td> </tr> <tr> <td colspan="2" style="background-color: #000000; color: white;"><b>PROTECTIVE EQUIPMENT</b></td> </tr> <tr> <td style="background-color: #000000; color: white;"><b>EYES</b></td> <td style="text-align: center;"><b>B</b></td> </tr> <tr> <td style="background-color: #000000; color: white;"><b>SKIN</b></td> <td></td> </tr> </table>	<b>HEALTH</b>	<b>0</b>	<b>FLAMMABILITY</b>	<b>1</b>	<b>PHYSICAL HAZARDS</b>	<b>0</b>	<b>PROTECTIVE EQUIPMENT</b>		<b>EYES</b>	<b>B</b>	<b>SKIN</b>	
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## 5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	Will not burn, but decomposition, which may be caused by heat, will release oxygen which will increase the explosive limit range and burning rate of flammable vapors. As a result of combustion and thermal decomposition, oxidation products may form and exposure to such products may result in health hazards	
5.2	Extinguishing Methods:	Water-mist, sand, CO <sub>2</sub> , dry chemical or other media appropriate for surrounding materials.	
5.3	Firefighting Procedures:	Fight fires as for surrounding materials. Firefighters should wear a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Fire should be fought from a safe distance. Keep containers cool until well after the fire is out. Cool containers with water spray to prevent pressure build-up, auto-ignition or explosion. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway.	

## 6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	<p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment.</p> <p>For <u>small spills</u> (e.g., &lt; 1 gallon (3.8 L)) wear appropriate personal protective equipment (e.g., goggles, gloves). Remove spilled material and place into appropriate closed container(s) for disposal. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas and outside of container with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse.</p> <p>For <u>large spills</u> (e.g., ≥ 1 gallon (3.8 L)), deny entry to all unprotected individuals. Dike and contain spill. Transfer to containers for recovery or disposal and diking material to separate containers for proper disposal. Remove contaminated clothing promptly and wash affected skin areas with soap and water. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.</p>
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## 7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid eye contact.
7.2	Storage & Handling:	Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans). Do not store in damaged or unmarked containers or storage devices. Keep containers securely closed when not in use.
7.3	Special Precautions:	Spilled material may present a slipping hazard if left unattended. Clean all spills promptly.

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Exposure Limits: ppm (mg/m <sup>3</sup> )		ACGIH		NOHSC			OSHA		OTHER	
		CHEMICAL NAME(S)	TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
		GLYCERIN	10	NA	NF	NF	NF	5	NA	NA	
		ETHANOL (SD ALCOHOL 40B)	1000	3000	1000	1800	NF	1000	1900	3300	
8.2	Ventilation & Engineering Controls:	When working with large quantities of product, provide adequate ventilation (e.g., local exhaust ventilation, fans), to keep exposure below the airborne exposure limits. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.									
8.3	Respiratory Protection:	None required if used in a well-ventilated area.									
8.4	Eye Protection:	Avoid eye contact. Protective eyewear (e.g., safety glasses with side-shield) is recommended at all times when handling this product. Always use protective eyewear when cleaning spills or leaks.									
8.5	Hand Protection:	None required under normal conditions of use.									
8.6	Body Protection:	None required under normal conditions of use.									

## 9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	White paper on plastic membrane
9.2	Odor:	neutral
9.3	Odor Threshold:	NA
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	> 100 °C (> 212 °F)
9.7	Flashpoint:	> 238 °C (> 460 °F) Pensky closed cup
9.8	Upper/Lower Flammability Limits:	NA
9.9	Vapor Pressure:	NA
9.10	Vapor Density:	> 1
9.11	Relative Density:	1.1
9.12	Solubility:	NA
9.13	Partition Coefficient (log P <sub>ow</sub> ):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	Evaporation rate < 1 (Ethyl ether = 1)

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards SDS Revision: 2.0 SDS Revision Date: 6/8/2016

## 10. STABILITY & REACTIVITY

10.1	Stability:	This product is stable.
10.2	Hazardous Decomposition Products:	Thermal decomposition may produce carbon dioxide, carbon monoxide, diphenylmethane diisocyanate, silicone dioxide and other products of incomplete combustion.
10.3	Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	Open flames, sparks, high heat and direct sunlight.
10.5	Incompatible Substances:	None known or reported.

## 11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: <b>NO</b>	Absorption: <b>YES</b>	Ingestion: <b>YES</b>	
11.2	Toxicity Data:	The product has not been tested on animals to obtain toxicological data. There are toxicology data for the components of this product, which are found in the scientific literature. <u>Polydimethylsiloxane</u> : LD <sub>50</sub> , Oral rat: > 5,000 mg/kg.			
11.3	Acute Toxicity:	See section 4.4			
11.4	Chronic Toxicity:	See section 4.5			
11.5	Suspected Carcinogen:	No			
11.6	Reproductive Toxicity:	This product is not reported to produce reproductive toxicity in humans.			
	Mutagenicity:	This product is not reported to produce mutagenic effects in humans.			
	Embryotoxicity:	This product is not reported to produce embryotoxic effects in humans.			
	Teratogenicity:	This product is not reported to produce teratogenic effects in humans.			
	Reproductive Toxicity:	This product is not reported to produce reproductive effects in humans.			
11.7	Irritancy of Product:	See Section 4.3			
11.8	Biological Exposure Indices:	NA			
11.9	Physician Recommendations:	Treat symptomatically.			

## 12. ECOLOGICAL INFORMATION

12.1	Environmental Stability:	No specific data available.
12.2	Effects on Plants & Animals:	No specific data available.
12.3	Effects on Aquatic Life:	There are no specific data available for this product; however, very large releases of this product may be harmful or fatal to overexposed aquatic life.

## 13. DISPOSAL CONSIDERATIONS


13.1	Waste Disposal:	Dispose of in accordance with Federal, state and local regulations.
13.2	Special Considerations:	NA

## 14. TRANSPORTATION INFORMATION


The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

14.1	49 CFR (GND):	NOT REGULATED	
14.2	IATA (AIR):	NOT REGULATED	
14.3	IMDG (OCN):	NOT REGULATED	
14.4	TDGR (Canadian GND):	NOT REGULATED	
14.5	ADR/RID (EU):	NOT REGULATED	
14.6	SCT (MEXICO):	NOT REGULATED	
14.7	ADGR (AUS):	NOT REGULATED	

## 15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product does not contain any substances subject to SARA Title III, section 313 reporting requirements.
15.2	SARA Threshold Planning Quantity:	There are no specific Threshold Planning Quantities for the components of this product.
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.
15.4	CERCLA Reportable Quantity (RQ):	NA
15.5	Other Federal Requirements:	This material does not contain any hazardous air pollutants. None of the components in this product are listed as priority pollutants under the CWA. None of the components in this product are listed as toxic pollutants under the CWA.
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. 
15.7	State Regulatory Information:	<u>Polydimethylsiloxane</u> is found on the following state criteria list: MA, NJ and PA. No other ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI).

## 15. REGULATORY INFORMATION – cont'd

15.8	Other Requirements:	<p>The primary components of this product are not listed in Annex I of EU Directive 67/548/EEC: Irritant (Xi).</p> <p><u>Risk Phrases (R):</u> 36 – Harmful if swallowed. Irritating to eyes.</p> <p><u>Safety Phrases (S):</u> 1/2 -24/25-45 – Keep container locked up and out of reach of children. Avoid contact with skin and eyes. In case of accident or if you feel unwell seek medical advice immediately (show label where possible).</p>	
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## 16. OTHER INFORMATION

16.1	Other Information:	<p><b>WARNING! CAUSES SERIOUS EYE IRRITATION.</b> Use only as directed. Discontinue use immediately if irritation develops. Avoid contact with skin and eyes. In case of accident or if you feel unwell seek medical advice immediately (show label where possible). <b>KEEP CONTAINER LOCKED UP AND OUT OF REACH OF CHILDREN</b></p>	
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.	
16.3	Disclaimer:	<p>This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's &amp; Birchwood Laboratories, LLC's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.</p>	
16.4	Prepared for:	<p><b>Birchwood Laboratories LLC</b> 7900 Fuller Road Eden Prairie, MN 55344 USA Tel: +1 (952) 937-7968 Fax: +1 (952) 937-7979 <a href="http://www.birchwoodlabs.com">http://www.birchwoodlabs.com</a></p>	
16.5	Prepared by:	<p><b>ShipMate, Inc.</b> P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 <a href="http://www.shipmate.com">http://www.shipmate.com</a></p>	

## DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

### GENERAL INFORMATION:

<b>CAS No.</b>	Chemical Abstract Service Number
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### EXPOSURE LIMITS IN AIR:

<b>ACGIH</b>	American Conference on Governmental Industrial Hygienists
<b>TLV</b>	Threshold Limit Value
<b>OSHA</b>	U.S. Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limit
<b>IDLH</b>	Immediately Dangerous to Life and Health

### FIRST AID MEASURES:

<b>CPR</b>	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.
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### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

### HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard

HEALTH
FLAMMABILITY
PHYSICAL HAZARDS
PERSONAL PROTECTION

### PERSONAL PROTECTION RATINGS:

<b>A</b>	
<b>B</b>	
<b>C</b>	
<b>D</b>	
<b>E</b>	
<b>F</b>	

<b>G</b>	
<b>H</b>	
<b>I</b>	
<b>J</b>	
<b>K</b>	
<b>X</b>	Consult your supervisor or SOPs for special handling directions.

Safety Glasses	Splash Goggles	Face Shield & Protective Eyewear	Gloves
Boots	Synthetic Apron	Protective Clothing & Full Suit	Dust Respirator
Full Face Respirator	Dust & Vapor Half-Mask Respirator	Full Face Respirator	Airline Hood/Mask or SCBA

### OTHER STANDARD ABBREVIATIONS:

<b>NA</b>	Not Available
<b>NR</b>	No Results
<b>NE</b>	Not Established
<b>ND</b>	Not Determined
<b>ML</b>	Maximum Limit
<b>SCBA</b>	Self-Contained Breathing Apparatus

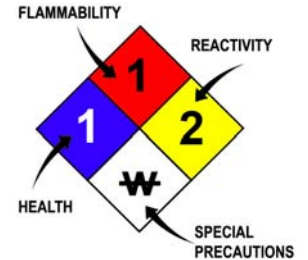
### NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

### FLAMMABILITY LIMITS IN AIR:

<b>Autoignition Temperature</b>	Minimum temperature required to initiate combustion in air with no other source of ignition
<b>LEL</b>	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
<b>UEL</b>	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

### HAZARD RATINGS:

<b>0</b>	Minimal Hazard
<b>1</b>	Slight Hazard
<b>2</b>	Moderate Hazard
<b>3</b>	Severe Hazard
<b>4</b>	Extreme Hazard
<b>ACD</b>	Acidic
<b>ALK</b>	Alkaline
<b>COR</b>	Corrosive
<b>W</b>	Use No Water
<b>OX</b>	Oxidizer
<b>TREFOIL</b>	Radioactive



### TOXICOLOGICAL INFORMATION:

<b>LD<sub>50</sub></b>	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
<b>LC<sub>50</sub></b>	Lethal concentration (gases) which kills 50% of the exposed animal
<b>ppm</b>	Concentration expressed in parts of material per million parts
<b>TD<sub>10</sub></b>	Lowest dose to cause a symptom
<b>TCLo</b>	Lowest concentration to cause a symptom
<b>TD<sub>10</sub>, LD<sub>10</sub>, &amp; LD<sub>0</sub> or TC, TC<sub>0</sub>, LC<sub>10</sub>, &amp; LC<sub>0</sub></b>	Lowest dose (or concentration) to cause lethal or toxic effects
<b>IARC</b>	International Agency for Research on Cancer
<b>NTP</b>	National Toxicology Program
<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances
<b>BCF</b>	Bioconcentration Factor
<b>TL<sub>m</sub></b>	Median threshold limit
<b>log K<sub>OW</sub> or log K<sub>OC</sub></b>	Coefficient of Oil/Water Distribution

### REGULATORY INFORMATION:

<b>WHMIS</b>	Canadian Workplace Hazardous Material Information System
<b>DOT</b>	U.S. Department of Transportation
<b>TC</b>	Transport Canada
<b>EPA</b>	U.S. Environmental Protection Agency
<b>DSL</b>	Canadian Domestic Substance List
<b>NDSL</b>	Canadian Non-Domestic Substance List
<b>PSL</b>	Canadian Priority Substances List
<b>TSCA</b>	U.S. Toxic Substance Control Act
<b>EU</b>	European Union (European Union Directive 67/548/EEC)
<b>WGK</b>	Wassergefährdungsklassen (German Water Hazard Class)

### WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

Class A	Class B	Class C	Class D1	Class D2	Class D3	Class E	Class F
Compressed	Flammable	Oxidizing	Toxic	Irritation	Infectious	Corrosive	Reactive

### EC (67/548/EEC) INFORMATION:

Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

### CLP/GHS (1272/2008/EC) PICTOGRAMS:

GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment