

## Material Safety Data Sheet

I. GENERAL INFORMATION			
Chemical Name: <i>Dimethylether/Propane/Isobutane</i>	Trade Name: <i>Histofreezer® Portable Cryosurgical System</i>		
Shipping Name: <i>Liquefied Gas, Flammable, n.o.s.</i>	Hazard Class: <i>Flammable Gas 2</i>		
I.D. No.: UN3161			
II. HAZARDOUS INGREDIENTS			
Principal Hazardous Components:	CAS #	%	TLV (Units)
<i>Dimethylether (DME)</i>	<i>115-10-6</i>	<i>95</i>	<i>MAC 100 ppm</i>
<i>Propane</i>	<i>74-98-6</i>	<i>2</i>	<i>MAC &gt; 600 ppm; OSHA PEL 1000 ppm</i>
<i>Isobutane</i>	<i>75-28-5</i>	<i>3</i>	<i>800 ppm</i>
III. PHYSICAL DATA			
Boiling Point (°F): <i>DME-25°C/PROPANE-41°C/ISOBUTANE-12°C</i>		Specific Gravity (H <sub>2</sub> O=1.0): <i>0.625</i>	
Vapor Pressure (mmHg @ 68°F): <i>Not Available</i>		Percentage Volatile by Volume: <i>100%</i>	
Vapor Density (Air=1): <i>&gt;1</i>		pH: <i>Not Applicable</i>	
Solubility in Water: <i>Not Available</i>		Evaporation Rate (Butyl Acetate=1): <i>Not Available</i>	
Appearance and Odor: <i>Under Pressure As A Liquid</i>			
IV. FIRE AND EXPLOSION HAZARD DATA			
Flash Point (Method): <i>DME-41°C (TOC)</i>		Auto Ignition Temperature: <i>DME 350°C (622°F)</i>	
Flammable Limits in Air (% by Volume): LEL: <i>DME 3.4/PROPANE 2.1/ISOBUTANE 1.8</i> UEL: <i>DME 18.0/PROPANE 9.5/ISOBUTANE 8.4</i>			
Extinguishing Media: <i>CO<sub>2</sub>      Dry Chemical      BCF</i>			
Special Fire Fighting Procedures: <i>Take canister out of the fire zone if possible, and keep it cool.</i>			
Unusual Fire and Explosion Hazards: <i>Canister can explode when heated above 50°C.</i>			
V. REACTIVITY DATA			
Stability: <i>Stable</i>		Conditions to Avoid: <i>Strong oxidizers</i>	
Incompatibility (Materials to Avoid): <i>Strong oxidizers</i>			
Hazardous Polymerization: <i>Will Not Occur</i>		Conditions to Avoid: <i>None</i>	
Hazardous Decomposition Products: <i>Not Applicable</i>			

VI. HEALTH HAZARD DATA			
Threshold Limit Value: <i>DME 100 ppm</i>		Carcinogen: <i>No</i>	
Effects of Exposure:	<b>Eye Contact</b> - <i>Freezing</i> <b>Skin Contact</b> - <i>Freezing</i> <b>Inhalation of Vapors</b> - <i>Dizzy, Headache</i>		
Primary Route(s) of Entry: <b>Dermal</b> <b>Inhalation</b> <b>Ingestion</b> ( <i>Not considered a potential route of exposure</i> )			
First Aid Procedures:	<b>Eye Contact</b> - <i>Flush eyes with lukewarm water for 15 min., consult doctor.</i> <b>Skin Contact</b> - <i>Keep skin under lukewarm water for 15 min., consult doctor.</i> <b>Inhalation</b> - <i>Fresh air and rest.</i> <b>Ingestion</b> - <i>Not applicable.</i>		
VII. ENVIRONMENTAL PROTECTION PROCEDURES			
Spill Response: <i>The liquefied gas will evaporate quickly. Provide ventilation. Avoid sources of ignition.</i>			
Waste Disposal Method: <i>Comply with local, state and federal standards.</i>			
VIII. SPECIAL PROTECTION INFORMATION			
Protection:	<b>Respiratory</b> - <i>Do not inhale vapors.</i> <b>Eye</b> - <i>Do not spray into eyes.</i> <b>Skin</b> - <i>Do not spray directly on to skin.</i>		
Ventilation Recommended:	<b>Local Exhaust</b> - <i>Not Applicable.</i> <b>Mechanical (General)</b> - <i>Use in well-ventilated area.</i>		
Other Protective Equipment: <i>Not Applicable</i>			
IX. SPECIAL PRECAUTIONS			
Handling and Storage: <i>Store canister in a cool, dry place. Do not expose to temperatures above 120°F or store near heat or open flame.</i>			
Other Precautions: <i>Do not puncture or incinerate canister.</i>			
NFPA Ratings:	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>
Dimethyl Ether	2	4	1
Propane	1	4	0
Isobutane	1	4	0

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date hereof; however, OraSure makes no warranty with respect to the accuracy of the information or the suitability of the recommendations and assumes no liability to any user thereof.