



## Renewable Lubricants, Inc.

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### Bio-Corrosion Inhibitor™ (BCI™) & Bio-Volatile Corrosion Inhibitor™ (BVCI™) Products



#### **Bio-Water Emulsifiable™ Corrosion Inhibitor:**

RLI Item # 86200

An outstanding water emulsifiable, corrosion inhibitor with BCI technology. This product provides a light, waxy film and may be used in many metalworking applications where excellent in-house corrosion protection and easy cleaning of parts is essential. For best results, use immediately after mixing. When added to water, this BCI product provides the following typical test results.

#### *TYPICAL TEST DATA*

ASTM D-92 Flash Point 160°C		ASTM D-97 Pour Point 0°C		
Emulsion Base in Water (%)	Humidity Cabinet <sup>1</sup> Days/Fail		5% Salt Spray <sup>2</sup> Hours/Fail	
	Sandblasted Panels	Polished Panels	Sandblasted Panels	Polished Panels
10.0	40	55	24	48
15.0	55	60+	40	72
20.0	60+	60+	48	96
25.0	60+	60+	72	120

<sup>1</sup>ASTM D-1748

<sup>2</sup>Federal Standard 791b Method 4001.2

#### **Bio-Medium Preservative™ Lubricant: Meets Mil-PRF-3150D**

A BCI™ product that gives outstanding corrosion protection as measured by humidity cabinet and salt spray test. It provides protection on ferrous and non-ferrous metals and is non-staining. Excellent as a wire rope lubricant, preservative lubricant, etc. on sheet steel and steel parts and is more fire resistant than mineral base formulas with the same viscosity. Also, excellent on copper corrosion test (Passed Clean 1A).

RLI Item # Bio-Med Preserv Lube	86000	Bio-Med Preserv Lube ISO 40	86040
Bio-Med Preserv Lube ISO 8	86010	Bio-Med Preserv Lube ISO 46 + Tack	86050
Bio-Med Preserv Lube ISO 46	86030	Bio-Med Preserv Lube ISO 100 + Tack	86060

#### *TYPICAL TEST DATA*

ASTM D-445 105 cSt @ 40°C	ASTM D-92 Flash Point 224°C	ASTM D-97 Pour Point -30°C
Humidity Cabinet <sup>1</sup> Days/Fail	Sandblasted Steel Panels 60+days	Polished Steel Panels 60+days
		Polished Aluminum 24 days
5% Salt Spray <sup>2</sup> Hours/Fail	Sandblasted Steel Panels 48 hours	Polished Steel Panels 80 hours
		Polished Aluminum 240 hours

<sup>1</sup>ASTM D-1748

<sup>2</sup>Federal Standard 791b Method 4001.2

#### **Bio-Acid Fume™ Rust Preventative Fluids:**

The Bio-Acid Fume Rust Preventative Fluid is a Bio-Corrosion Inhibitor™ (BCI™) product that provides a corrosion inhibiting, waxy film that is especially effective in protecting ferrous metals in salt and acid fume (hydrochloric acid) environments and against high humidity. It is non-staining and water displacing and is also effective on galvanized steel. In addition to corrosion protection, this product is a non-chlorinated metal working fluid that provides extreme pressure, anti-wear, and lubricity performance in heavy duty stamping and drawing applications. This is an excellent BCI™ product that can be used in many industrial and commercial applications where corrosion inhibiting, waxy films are beneficial.

#### *TYPICAL TEST DATA:*

<b>Med-Light Film</b> RLI Item # 86110	ASTM D-445 40 cSt @ 40°C meets Ford Specification M-14B90A
Humidity Cabinet <sup>1</sup> Days/Fail 40	Water Displacement <sup>2</sup> 1:1 Dilution-Pass Water Storage-Pass
<b>Light Film</b> RLI Item # 86100	ASTM D-445 5 cSt @ 40°C for easier cleaning
Humidity Cabinet <sup>1</sup> Days/Fail 60+	Water Displacement <sup>2</sup> 1:1 Dilution-Pass Water Storage-Pass

<sup>1</sup>ASTM D-1748 using polished cold rolled steel panels

<sup>2</sup>Mil-C-16173

5% Salt Spray <sup>2</sup> Hours/Fail	Sandblasted Steel Panels >48 hours	Polished Steel Panels >80 hours
Acid Fume Rust Protection, Hours/Fail	>100 hours	

**Bio-Volatile Corrosion Inhibitors™:  
(BVCI™ Ultra Thin Film)**

RLI Item # 86300

BVCI™s are outstanding water displacing, non-staining rust preventatives. BVCI™s will rapidly separate water displaced from metal surfaces after machining operations or after alkali cleaning. Ultra thin, highly protective films can be applied easily by dipping, spraying, or brushing. These ultra thin films are effective in the protection of ferrous and non-ferrous metals from atmospheric corrosion even under conditions of high humidity. When BVCI™s are agitated vigorously with water or alkaline solutions, the water will separate completely and rapidly. (ASTM D-445 2 cSt to 7 cSt viscosity range- Non Flammable Flash Points)

*TYPICAL TEST DATA* <sup>1</sup>ASTM D-1748 using polished cold rolled steel panels <sup>2</sup>MIL-C-16173E <sup>3</sup>MIL-C-22235 BLP=Borderline Pass  
Humidity Cabinet<sup>1</sup>

Thickness (mils)	Days/Fail	Water <sup>2</sup> Displacement	Sandwich Stain Test <sup>3</sup>
0.02	30+	BLP	Pass
0.03	40+	Pass	Pass
0.05	50+	Pass	Pass
0.06	60+	Pass	Pass

**Bio-Penetrating Lubricant™/Corrosion Inhibitor FPR (Fingerprint Removal Spec):**

RLI Item # 86500

A light biobased lubricant that cleans and helps keep deposits from forming on weapons, while preventing corrosion. Provides a light lubricating film. Meets Mil-C-15074E Corrosion Preventative, Fingerprint Remover Specification. An excellent product for many industrial applications where a light penetrating lubricant/corrosion inhibitor is needed.

*TYPICAL TEST DATA*

ASTM D-445 10.4 cSt @ 40°C      ASTM D-93 Flash Point 115°C      ASTM D-97 Pour Point -20°C

**Bio-Cleaning Compound/Corrosion Inhibitor (Gun Bore Cleaner):**

RLI Item # 86600

This BCI product meets Mil-PRF372D Gun Cleaning Compound for bore of small arms and automatic aircraft weapons. Excellent for applications where cleaning and corrosion prevention are necessary. Better cleaning ability than Mil-C-15074E Corrosion Preventative Product.

*TYPICAL TEST DATA*

ASTM D-445 6.4 cSt @ 40°C      ASTM D-93 Flash Point 110°C      ASTM D-97 Pour Point -15°C

STABILIZED by Renewable Lubricants\* is RLI's trademark on their proprietary and patented anti-oxidant, anti-wear, and cold flow technology. High Oleic Base Stock (HOBS) are agricultural vegetable oils. This Stabilized technology allows the HOBS to perform as a high performance formula in high and low temperature applications, reducing oil thickening and deposits.

Patented Product: US Patent 6,383,992, US Patent 6,534,454, US Patent 6,624,124, US Patent 6,620,772 with additional Pending and Foreign Patents

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**Availability    F.O.B. :Hartville, Ohio, USA    1 Gallon    5 Gallon Pail    Drum    Totes    Bulk**