



Renewable Lubricants, Inc.

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Bio-based and Biodegradable Solutions for Wire Rope Lubricants

Problem

Wire Rope is used in many industrial applications and is comprised of multi-strand wire wound around a central core of steel or fiber. Wire rope will generally come from the manufacturer with some type of petroleum compounds (petrolatum or asphaltic) that are not biodegradable and toxic to the environment.

After the wire rope is used in the application, re-lubrication is required by the equipment manufacturer to maintain the life of the cable. The use of volatile organic petroleum solvent and non-biodegradable lubricants to clean and lubricate the wire rope has created environmental issues and fines from the EPA. Because the materials are totally lost into the environment, millions of gallons of toxic compounds have contaminated our soil, ground water, streams, rivers, lakes, and oceans.

Solution

Renewable Lubricants, Inc. (RLI) manufactures and markets a full line of biobased, biodegradable products to maintain and properly lubricate wire ropes including: Bio-E.P.TM Wire Rope Lubricants, Bio-E.P.TM Wire Rope Compound, Bio-Chain and CableTM Lubricants, Bio-Penetrating LubricantTM (BPL), BPLTM Food Grade NSF H1, Bio-BlastTM Penetrant, Bio-Parts Cleaner/DegreaserTM, Bio-Parts Cleaner/DegreaserTM Plus Corrosion Inhibitor, and Bio-Parts Cleaner/DegreaserTM Food Grade.

The advantages are many: biodegradable, renewable, environmentally non-toxic, contains no hazardous Volatile Organic Compounds (VOCs), ISO 14000 compliant, safer, helps secure the American Economy, reduces our dependence on foreign oils, and multi-performance. EPA, OSHA, and Workers Acceptance is high with Biobased Products.

Bio-Parts Cleaner/DegreaserTM is a biodegradable, environmentally nontoxic product that is recommended to clean cables before lubrication in environmentally sensitive areas. (If a cable is dirty or has accumulated layers of hardened lubricant or other contaminants, it is recommended that the cable be cleaned with Bio-Parts Cleaner/DegreaserTM and wire brush and/or compressed air, or steam cleaner before re-lubrication. The wire rope must then be dried and lubricated immediately with RLI's wire rope lubricants to prevent rusting).

Bio-Parts Cleaner/DegreaserTM Plus Corrosion Inhibitor provides the same cleaning benefits as food grade Bio-Parts Cleaner/DegreaserTM above, but provides short-term (30 days ASTM D1748 humidity cabinet) corrosion protection while static and until RLI's biodegradable wire rope lubricant can be applied.

Bio-Parts Cleaner/DegreaserTM Food Grade (H1) is a biodegradable, environmentally nontoxic product that is recommended to clean cables before lubrication in water treatment plants, food processing facilities, and environmentally sensitive areas.

Bio-Penetrating LubricantTM (BPL) is a light biodegradable penetrating lubricant with anti-wear and multi-metal corrosion protection that can be used to clean and lubricate smaller cables in one application. BPLTM is an excellent lubricant as shown in, ASTM D-2266 4 ball wear test .40 mm scar wear, and passes clean (no rust) on ASTM D-665 both A and B corrosion test. It penetrates deep into the inner core of the cable or chain link, preventing rust and wear. It tests excellent on yellow metals (passes copper strip corrosion ASTM D-130 test 1A). BPLTM displaces moisture and provides a very high dielectric (47 kV ASTM D-877) insulating property in electrical equipment. BPLTM contains **no** hazardous Volatile Organic Compounds (VOCs). The use of BPLTM in an aerosol spray can has been a maintenance favorite and provides an easy method to spray, clean, and lubricate small cables while at the same time inspect for frayed strands using a rag to wipe along the cable. **Caution: always use heavy leather gloves when performing maintenance on wire ropes.**

BPL™ Food Grade NSF H1 provides the same safe, anti-wear benefits as RLI's standard BPL above and is used to clean and lubricate cables in food processing plants where the lubricant could come in incidental contact with food.

Bio-Blast™ Penetrant (Low Surface Tension) is a specially formulated, biodegradable, fast acting penetrant in an aerosol can that blows away rust and dirt on cables for fast cleaning and preventing corrosion (20 to 30 days ASTM D1748 humidity cabinet). Bio-Blast™'s patented composition of additives and bio-solvents provides a fast penetrating catalyst that is non-staining to ferrous and non-ferrous metals. Bio-Blast™ displaces moisture and provides a very high dielectric (47 kV ASTM D-877) insulating property in electrical equipment. Bio-Blast™ contains **no** hazardous Volatile Organic Compounds (VOCs) and is formulated to meet or exceed Federal Specification A-A-50493B (superceding V V-P-216).

Bio-E.P.™ Wire Rope Lubricants are provided in different viscosities of biodegradable lubricants with extreme pressure (EP), anti-wear, and anti-rust properties. They penetrate and lubricate deep into the inter-core while protecting the outer strands from high stress and/or shock loading. The penetrating action of these wire rope lubricants reduce abrasive wear inside the rope and also clean the external surface to remove dirt and other contaminants.

Bio-E.P.™ Wire Rope Compound provides the same benefits as the Bio-E.P.™ Wire Rope Lubricants above, but with a tacky grease coating that penetrates slower when applied and provides excellent water resistance. It may be used as the primary lubricant or secondary top coating after the Bio-E.P.™ Wire Rope Lubricant is applied. Top coating with Bio-E.P.™ Wire Rope Compound is a favorite around marine and dock areas where the cables are in contact with salt water. This product is especially formulated to release the base oil and penetrate as the cable is working. A pressure lubricator works best in allowing this product to penetrate into the inner core.

Bio-Chain and Cable™ Lubricants provide anti-wear, extreme pressure, and multi-purpose corrosion protection for chains and cables. The products are supplied in four different viscosities and have a versatile advantage of serving many applications because they provide multi-metal corrosion protection and can be used on ferrous and non-ferrous metals or where galvanized wire strands are used.

Field Maintenance

Field re-lubrication is required by the equipment manufactures to protect from corrosion, wear, and extend the life of the rope core. The life cycle of a wire rope can vary and is dependent on the type of operation, environment, and how the wire rope is maintained. Over time, petrolatum and asphaltic petroleum compounds applied by the cable manufacturer can attract dirt, become brittle and wear off. Fiber core wire rope can dry out over time, absorb moisture and increase corrosion in the interior section of the cable. Wire rope lubricants that penetrate reduce corrosion and abrasive wear inside the rope. In addition, they clean and lubricate the external surface to remove dirt and contaminants. Lubricants can be applied by spray, brush, dip, drip or pressure boot. Lubricants are best applied at the drum or sheave where the rope strands have a tendency to separate slightly due to the bending to facilitate maximum penetration to the core. If a pressure boot application is used, the lubricant is applied to the rope under light tension in a straight condition. During the cleaning process, lubricants and/or contaminants should be collected and disposed of in compliance of local and federal laws. Full compliance with other applicable restrictions of FDA, USDA, US Coast Guard, EPA, etc., oil spill, and oil pollution prevention statutes is recommended. Excessive lubricant application should be avoided to prevent safety hazards and environmental problems.

RLI's Biobased Wire Rope Lubricants, Penetrants, and Cleaner/Degreasers are ENVIRONMENTALLY RESPONSIBLE products that are formulated from renewable agricultural plant resources. We believe Earth's environmental future rests in the use of renewable materials.

(See Full Data Sheets or call RLI for more Information on these Biobased Products)