

Wire Rope News & Sling Technology

December 1994

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**A software for
the wire rope industry**



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Kirkpatrick Group develops environmentally safe wire rope lube

It is known by the Coast Guard and oceanographic institutions that conventional petroleum and linseed oil-based wire rope lubricants are toxic to estuary shrimp and other sea organisms. Now, however, the Kirkpatrick Group offers a new lube, Dynagard "E", shown in government lab tests to be non-toxic to fish and humans alike. Kirkpatrick also offers a system to clean wire rope and apply the new lubricant in a one-pass operation.

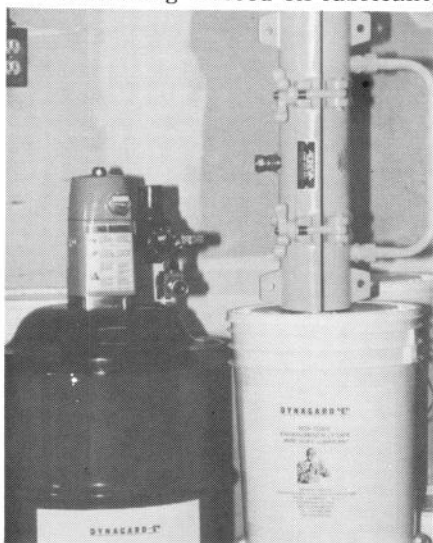
When wire rope is treated with conventional petroleum-base grease, its lubricant can leach out and kill mysidsopsis bahia (estuary shrimp species). In short, ordinary lube is toxic.

To eliminate the toxicity problem, the Kirkpatrick Group, 401 So. Sherman St., Richardson, TX 75081 has developed a lubricant called Dynagard "E." Kirkpatrick also offers a high pressure lubrication system to impregnate wire rope with Dynagard "E" or other wire rope lubricants. The system will be described later in this article.

Dynagard "E"

Environmental LC-50 acute toxicity testing by independent labs performed on Dynagard "E" used the most sensitive marine organisms available: mysidsopsis bahia. According to the manufacturer, comparison tests using the same procedures were performed against two accepted environmental products:

1. A leading linseed oil lubricant,



The pump that delivers grease to the lubricator is at the left, and a lubricator is seen standing on a container of Dynagard "E" lubricant.

represented as an environmentally safe product, widely used by the shipping and oceanographic industries.

2. An accepted environmentally friendly petroleum-base wire rope lubricant.

Results of these tests showed the following:

- The petroleum based lubricant showed low toxicity levels with 2,323 parts per million to kill 50% of the test specimens.

- The linseed oil product showed much higher toxicity using a substantially lower concentration of 47 parts per million to kill 50% of the test specimens.

- Dynagard "E" in the same test time frame at concentrations of 5,000 parts per million (almost 100 times more concentrated than the linseed oil, and 50% more concentrated than the petroleum) had a 0% kill ratio. No specimens died.

Lab engineers test report summary

"Dynagard 'E' when exposed to water appeared less toxic to *M. bahia* than both of the other two products which had been exposed to water and tested under similar conditions. Dynagard 'E' appears to be virtually insoluble in water, therefore making it unavailable to the organisms and not toxic as a result," stated the report.

Human Toxicity

To the best of TKG, Inc. knowledge, this material does not contain any chemicals in reportable amounts listed as carcinogens, teratogens, mutagens, or reproductive toxins at the date of the tests.

Fire and explosion hazard data

- Flash point: 601°F (ASTM D-92)
- Flammable limits: 1,450°F
- Extinguishing media: Water, CO₂, dry chemical, foam
- Unusual fire and explosion hazards: None

Note: LC-50 value is an approved test

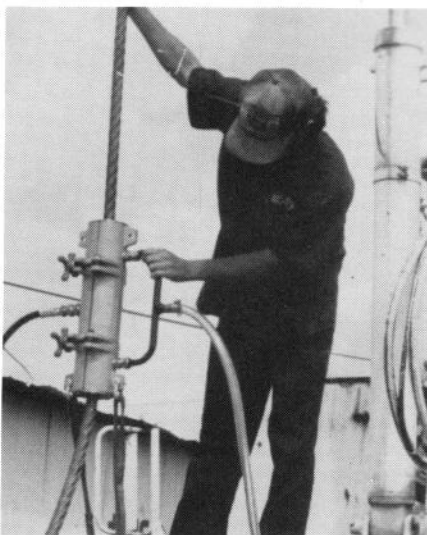
method to measure the lethal concentration to kill 50% of the test specimens in a given time frame within an aquatic environment. (In some toxicity test trout were used.)

The high pressure lubricator

The system consists of a covered drum of lube and a pump on top of the drum that delivers lubricant to the applicator under high pressure. A hose delivers grease to the applicator, and a second hose carries customer's compressed air to it.

The hinged applicator is closed around the wire rope. As the rope is pulled through, a scraper at its leading end clears dirt and grime from the rope's surface. Then as the rope passes through the applicator, fresh, clean grease is applied.

In only one pass, a wire rope will have its surface and grooves scraped clean, while at the same time fresh lubricant is uniformly applied to the newly cleaned surface and forced into the very core. Moisture trapped in the



Vertical wire rope being cleaned and lubricated by the Kirkpatrick pressure lubricator.

strands is forced out and replaced with new lubricant. All systems are compatible with both low and high viscosity lubricants.

Each system is delivered complete with one size seal and scraper plate kit plus the required components to commence immediate operation. An air source and lubricant supply are provided by the user. Recommended air pressure settings for various wire rope travel speeds in conjunction with lubricant viscosities are provided in the operating manuals accompanying each system.

Every size wire rope requires a corresponding size seal and scraper plate kit. If there is entrapped dirt and grease buildup in the rope's groove pattern, an optional groover kit is needed. Therefore, if the user has additional sizes of wire rope to be lubricated, corresponding sized seal and scraper plate kits and groove cleaner kits need to be ordered. A good feature is that all kits are interchangeable. The seal kits slip easily into the lubrication collar, and the groovers snap directly into the wire rope's groove pattern.

Kirkpatrick wire rope lubrication systems come in two basic configurations: Standard for wire rope sizes 5/16" to 1-5/8", and Jumbo for wire rope sizes 3/8" to 3-3/4".

Video tape is offered by Kirkpatrick

A 38-minute video tape is offered free to those seriously interested in the company's high pressure wire rope scraper/lubricator. Showing the device in action, the tape's scenes are at such locations as Inco Mines Ltd., U.S. Coast Guard Base, U.S. Army Corps of Engineers, and the Pearl Harbor Naval station. For information on requesting a video, phone Kirkpatrick at 214-669-9988 or FAX 214-669-0205, in Richardson, Texas. □

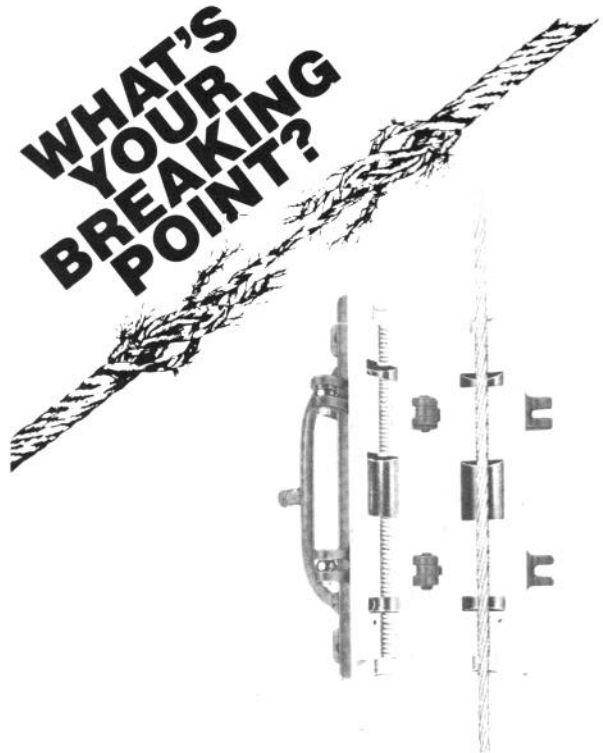
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"I became involved in the wire rope lubrication business 10 years ago out of a need created in the wire rope maintenance of our own fleet of over 200 cranes. Consequently, when you purchase our product you aren't just buying a wire rope lubrication system with a proven track record, but also our understanding of what your needs are. The results speak for themselves: No competitor in the market today can match our number of units in operation. Ask them."

R.T. Kirkpatrick
President

KIRKPATRICK WIRE ROPE LUBRICATION SYSTEM



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