KEMEL ST-83A is a biodegradable lubricant based on polyethylene glycol and it meets the EAL (Environmentally Acceptable Lubricant) specification in 2013 VGP of US EPA. It is designed specially for sterntube application, and provides adequate lubrication and corrosion prevention even when the lubricant contains 10% seawater.

The following points should be noticed for the application of ST-83A:
- Water contained cannot be separated from ST-83A by centrifugal purifier, because ST-83A is water-soluble.
- ST-83A is applied with KEMEL special seal of advanced fluoro-rubber. It should not be used with conventional KEMEL Compact Seal (regular VITON) nor the other seals.

1. Physical and Chemical Properties
   - **Appearance**: Yellow or brown liquid
   - **Viscosity at 40\(^\circ\)C**: 86 mm\(^2\)/s
   - **Viscosity at 100 \(^\circ\)C**: 15 mm\(^2\)/s
   - **Density at 15 \(^\circ\)C**: 1.13 g/cm\(^3\)
   - **Pour point**: –8\(^\circ\)C
   - **Flash point**: 225\(^\circ\)C

2. Environmental Properties
   - **Biodegradability**: Readily biodegradable according to OECD 301C.
   - **Toxicity**: Practically non-toxic according to OECD 201 (alge), OECD 202 (daphnia) and OECD 203 (fish).
   - **Bioaccumulation**: Practically not bioaccumulative according to OECD 107 and OECD 117.
   - **Sheen**: Forms no sheen on water surface because of the water-solubility.

3. Application to Vessel
   1) Piping arrangement
   **Piping**
   Piping design should be consulted with KEMEL. ST-83A should not be applied in the mixture of system oil. The line for sterntube lubricant should be separated from the line for system oil.
   **Tank**
   Epoxy paint should not be used for tank inside paint. Zinc-rich primer or non-coating should be recommended.
   **Flushing**
   In case of cleaning the inside of sterntube, pipes and tanks by flushing, ST-83A or turbine oil should be used as flushing oil.

4. Maintenance
   1) AFT and FWD Seal Tank
   ST-83A in the tank should be replaced to new one every 6 months. It is very difficult to find out seawater ingress into sterntube and oil leakage to sea. Daily oil level check is the most important and effective. Seawater contained in the tank can not be drained off because ST-83A is water-soluble.
2) Sterntube
It is very difficult to find out seawater ingress into sterntube and oil leakage to sea. Daily oil level check or checking of water content by using potable water content meter is effective. Seawater contained in the sterntube can not be drained off because ST-83A is water-soluble. ST-83A in the sterntube should be replaced to new one when its condition becomes unacceptable or every 5 years.

Criteria for water content in stern tube
Normal value : 5% or less
Cautious Value : 5 – 10%
Abnormal Value : more than 10%

5. Lubricant analysis
The oil samples are taken under service conditions and are to be representative of the oil within the sterntube for lubricant analysis at interval of 6 months.
Send the sample of 100 cc together with the information, oil name (ST-83A), ship name, sampling point, date sampled, and lubricant service time.

The attention is:
   Technical Department
   Eagle Industry Co., Ltd. KEMEL Company
   2-13-23, Shinhama, Arai-Cho Takasago-City, Hyogo, 676-8670 Japan
   Tel: +81 (0) 79 442-8301
   Fax: +81 (0) 79 442-3021

We would like to supply the potable water content meter if requested.

6. Disposal
ST-83A should be disposed as same as conventional system oil.

7. Storage
ST-83A should be stored as same as conventional system oil. Refer the SDS (Safety Data Sheet).

- END -