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# Mobil SHC Aware™ ST Series

ExxonMobil Marine , Central America

U.S. EPA 2013 Vessel General Permit Compliant Stern Tube Oil

### Product Description

Mobil SHC Aware™ ST Series lubricants are high performance, emulsifying stern tube oils for marine stern tube systems that meet the U.S. Environmental Protection Agency (EPA) 2013 Vessel General Permit (VGP) guidelines for "environmentally acceptable lubricants". Mobil SHC Aware ST Series emulsifies readily with seawater to form a stable water-in-oil emulsion that is adhesive and an excellent lubricant. It provides effective rust protection in the presence of seawater and the lubricating film is resistant to water washing so that corrosion protection is maintained for extended periods under severe operating conditions.

### Features and Benefits

- Meets US EPA 2013 Vessel General Permit requirements for environmentally acceptable lubricants
- Can safely run with up to 20% water content emulsion
- Excellent load carrying capability and corrosion protection
- Compatible with most typical mineral oils used for stern tubes
- Good elastomer compatibility, it works well with many of the same elastomers used with conventional mineral oils
- Mobil SHC Aware ST 220 can provide effective leak control when seal damage occurs

### Applications

- Marine stern tube systems, fin stabilizers, and certain controllable pitch propeller systems where spills or leakage could result in adverse environment impact
- In systems where readily biodegradable and minimally toxic fluids may be required
- Marine and mobile equipment operating in environmentally sensitive areas
- Circulation systems operating under mild to moderate service conditions

### Specifications and Approvals

| This product meets or exceeds the following regulatory requirements: | 100 | 220 |
|---|---|---|
| US EPA VGP:2013 | X | X |

### Properties and Specifications

| Property | 100 | 220 |
|---|---|---|
| Grade | ISO 100 | ISO 220 |
| Acute Algae Toxicity, EC50/72h, mg/l, OECD 201 | >1000 | >1000 |
| Acute Daphnia Toxicity, EC50/48h, mg/l, OECD 202 | >1000 | >1000 |
| Acute Fish Toxicity, LC50/96h, mg/l, OECD 203 | >1000 | >1000 |
| Bioaccumulation, Partition Coefficient, Log Pow, OECD 117 | <3 | <3 |

| Property | 100 | 220 |
|---|---|---|
| Density @ 15 C, kg/l, ASTM D4052 | 0.922 | 0.932 |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1 | 10 | 11 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 170 | 163 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 19.3 | 33.3 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 100 | 220 |
| Pour Point, °C, ASTM D97 | -24 | -12 |
| Rust Test, Sea Water, 24 h @ 60 C, ASTM D665-PROB | PASS | PASS |
| Shake-Flask Test, CO2 Evolution (Mod. Sturm), %, OECD 301B | >60 | >60 |
| Viscosity Index, ASTM D2270 | 180 | 200 |

**Health and Safety**

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims/psims.aspx

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Due to continual product research and development, the information contained herein is subject to change without notification. Typical Properties may vary slightly.

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