



## Mobil SHC Aware™ H Series

ExxonMobil Marine , Germany

U.S. EPA 2013 Vessel General Permit Compliant Hydraulic Oil

### Product Description

Mobil SHC Aware™ H Series lubricants are high performance, anti-wear hydraulic oils for modern high pressure hydraulic systems that meet the U.S. Environmental Protection Agency (EPA) 2013 Vessel General Permit (VGP) guidelines for "environmentally acceptable lubricants". They provide excellent wide temperature range performance above and beyond the capabilities of non-synthetic environmentally acceptable oils. Mobil SHC Aware H Series oils are specially formulated from ester base stocks and provide exceptional anti-wear and film strength characteristics necessary for hydraulic systems operating under high load and high pressures.

### Features and Benefits

- Meets US EPA 2013 Vessel General Permit requirements for environmentally acceptable lubricants
- Outstanding load-carrying and anti-wear properties which protects system components against wear and scuffing and helps provide long equipment life
- Shear stable high viscosity index help sustain component protection over a wide temperature
- Excellent thermal /oxidation stability that can help reduce maintenance downtime and costs by contributing to system cleanliness and deposit reduction, enable long oil and filter life
- Excellent demulsibility ensures ease of water removal in below waterline applications
- Good elastomer compatibility, it works well with same elastomers used with conventional mineral hydraulic oils

### Applications

- Marine controllable pitch propellers (CPP) systems, fin stabilizers, deck equipment, hydraulic systems where spills or leakage could result in adverse environment impact
- In systems where readily biodegradable and minimally toxic fluids may be required
- Circulation systems containing gears and bearings where mild extreme-pressure characteristics are desired
- Systems containing servo-valves
- Hydraulic systems operating with oil temperatures in the range of -30C to +100C
- Marine and mobile equipment operating in environmentally sensitive areas
- Circulation systems operating under mild to moderate service conditions
- Industrial hydraulic systems where leaked or spilled fluids could get into plant effluent
- Air line oilers and some limited oil-mist generating systems

### Specifications and Approvals

| <b>This product has the following approvals:</b>  | <b>32</b> | <b>46</b> | <b>68</b> |
|---|-----------|-----------|-----------|
| Denison HF-1                                      | X         | X         | X         |
| Denison HF-2                                      | X         | X         | X         |
| Denison HF-6                                      | X         | X         | X         |
| Eaton Corporation Brochure No. 03-401-2010, Rev 1 | X         | X         | X         |

| This product meets or exceeds the requirements of: | 32 | 46 | 68 |
|--|----|----|----|
| US EPA VGP:2013                                    | X  | X  | X  |

### Properties and Specifications

| Property   | 32     | 46     | 68     |
|--|--------|--------|--------|
| Grade  | ISO 32 | ISO 46 | ISO 68 |
| Acute Algae Toxicity, EC50/72h, mg/l, OECD 201                         | >1000  | >1000  | >1000  |
| Acute Daphnia Toxicity, EC50/48h, mg/l, OECD 202                       | >1000  | >1000  | >1000  |
| Acute Fish Toxicity, LC50/96h, mg/l, OECD 203                          | >1000  | >1000  | >1000  |
| Bioaccumulation, Partition Coefficient, Log Pow, OECD 117              | <3     | <3     | <3     |
| Density @ 15 C, g/ml, ASTM D4052                                       | 0.912  | 0.905  | 0.915  |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1                   | 11     | 12     | >12    |
| Flash Point, Cleveland Open Cup, °C, ASTM D92                          | 185    | 185    | 185    |
| Kinematic Viscosity @ 100 C, mm <sup>2</sup> /s, ASTM D445             | 6      | 8.2    | 10.37  |
| Kinematic Viscosity @ 40 C, mm <sup>2</sup> /s, ASTM D445              | 32     | 46     | 68     |
| Pour Point, °C, ASTM D97   | -54    | -36    | -36    |
| Rust Test, Sea Water, 24 h @ 60 C, ASTM D665-PROB                      | PASS   | PASS   | PASS   |
| Shake-Flask Test, CO <sub>2</sub> Evolution (Mod. Sturm), %, OECD 301B | >60    | >60    | >60    |
| Viscosity Index, ASTM D2270  | 140    | 140    | 140    |

### 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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