

Shell NAUTILUS®

Premium Outboard Motor Oil

Shell NAUTILUS® is designed to meet all outboard engine manufacturers performance requirements for pre-mix, direct oil injection, and newer generation direct injection two cycle engines.

Performance Features and Benefits

- **National Marine Manufacturers Association (NMMA) Approval**
Shell NAUTILUS® has exceeded the recertification requirement of the severe TC-W3 standard.
- **Reduced Spark Plug Fouling and Preignition**
Its state of the art “ashless” formulation minimizes the combustion chamber deposits which cause spark plug fouling and preignition. Reduced deposits result in enhanced performance and durability of the engine while eliminating the risk of preignition-induced engine damage.
- **Minimized Piston Deposits**
Superior dispersants enable the oil to help keep pistons clean and avoid ring sticking to ensure peak performance engine operation and lower maintenance costs.
- **Improved Lubricity/Scuffing Protection**
With its exclusive chemistry, Shell NAUTILUS® provides exceptional lubrication protection at higher temperatures in today's high powered, hard working outboard engines.
- **Superior Rust Protection**
Superb anti-rust additives help prevent rusting of critical engine parts during operation and storage for longer engine life.
- **Designed to Perform with Unleaded Fuels at Fuel to Oil Ratios up to 100:1**
Proven Shell performance when used in accordance with manufacturers recommended lubrication practices.
- **Reduced Smoke Emissions**
New Shell NAUTILUS® formulation responds to environmental concerns shared by all boating enthusiasts, by meeting the latest JASO FC smoke emission standard.
- **Blends Easily and Stays Mixed in Cold Temperatures**
It exceeds the requirements of an SAE FM 4 at -40° C for outstanding lubrication protection

- **Compatibility**
Shell NAUTILUS® is fully compatible with all other TC-W3 and TC-W II lubricants to eliminate any risk of operating mishaps.
- **Dyed Blue for Pre-mix Systems**
Shell NAUTILUS® contains an easily seen blue dye as a safety check - if it's blue it's blended.

Main Applications

The last decade has seen a gradual increase in the average horsepower produced by outboard engines, the introduction of fuel and lubricant injection systems, the phasing out of leaded fuels along with trends to higher fuel to oil ratios. More recently, new challenges such as smoke emissions and environmental concerns have come the forefront. In addition, today's outboard engines must be able to withstand the effects of higher speed and much higher temperatures.

In response to the needs of outboard engine manufacturers, the NMMA defined the TC-W3 standard of performance. This standard, is designed to increase the quality of lubricants available to the industry and the public. This new standard of quality will result in longer, trouble-free engine life by offering vastly improved lubricity and anti-scuffing protection over the former TC-W II specification. In addition, superior dispersants ensure peak engine performance by keeping pistons clean and free of deposits.

Shell NAUTILUS® is formulated and tested to exceed the NMMA TC-W3 standard. To the boating enthusiasts, Shell NAUTILUS® provides the ultimate in protection and performance in all water cooled, two cycle outboard engines.

Advice on applications not covered in this handbook may be obtained from your Shell representative.

Specifications, Approvals, and Recommendations

- **Meets all major outboard engine manufacturers recommendations**

Shell NAUTILUS® is specifically designed to meet the requirements of all major outboard engine manufacturers and provides performance demanded in their “own brand” TC-W3 oil. In addition, it meets the requirements of all other manufacturers requiring TC-W, TC-W II or TC-W3 quality lubricant. Shell NAUTILUS® is recommended for use in outboard engines manufactured by:

- Bombardier (formerly O.M.C.) - the manufacturers of Johnson and Evinrude
- Mercury Marine
- Yamaha
- Suzuki
- Nissan

Handling and Safety Information

For information on the safe handling, storage, or use of this product, refer to its Material Safety Data Sheet at <http://www.epc.shell.com/>. If you are a Shell Distributor, please call 1+800-332-6457 for all of your service needs. All other customers please call 1+800-237-8645 for all of your service needs.

Protect the Environment

Do not discharge into drains, soil, or water.

Typical Physical Properties

Shell NAUTILUS®		
API Rating	TC	-
NMMA Rating	TC-W3	-
SAE Fluidity/Miscibility grade	FM 4	-
Density @ 15° C kg/m ³	863	D 1298
Color	Blue	Visual
Pour point, °C	-48	D 97
Flash Point PMCC, °C min.	65	D 93
Viscosity		
@ 40 °C, cSt	33.1	D 445
@ 100 °C, cSt	6.8	D 445
Brookfield @ 40 °C, mPa.s	12,354	D 2983
Neutralization Value - TBN, mg KOH/g	9.3	D 2896

These characteristics are typical of current production. While future production will conform to Shell specifications, variation in these characteristics may occur.

- TC-W and TC-W3 are registered trademarks of the National Marine Manufacturers Association.
- **TC-W is a registered trademark of the Boating Industry Association.