



## Technical Data Sheet

- Reliable Protection
- Industrial Applications

# UPSOL MARINE 312, 412, 512

## TBN 12

### Marine Engine Oil

### SAE 30, 40, 50

UPSOL MARINE Series are formulated from HVI (High Viscosity Index) base oil with a well-balanced additive package which was specially designed for diesel engine lubricant. UPSOL MARINE Series have sufficient TBN to neutralize combustion acid; provides optimum protection against rust, corrosion & excessive wear; has a good balance between oxidation stability, detergency and dispersancy to prevent piston deposit formation and maintain engine cleanliness; and also, able to easily separate from dirt and water at the centrifugal separator. Additionally, it contains anti-foam additive to prevent foaming.

TYPICAL CHARACTERISTICS				
PROPERTIES	METHOD	MARINE 312	MARINE 412	MARINE 512
SAE Viscosity Grade		30	40	50
Density at 15°C, kg/l	ASTM D - 4052	0.893	0.896	0.901
Kinematic Viscosity at 40°C, cSt	ASTM D - 445	107.1	140.2	227.8
100°C, cSt		11.8	14.2	19.3
Viscosity Index	ASTM D - 2270	96	98	96
Flash Point, °C	ASTM D - 92	260	270	270
Pour Point, °C	ASTM D - 5950	-18	-18	-18
Total Base Number, mg KOH/g	ASTM D - 2896	12	12	12

## APPLICATIONS

UPSOL MARINE Series are designed especially for lubrication of medium speed trunk piston industrial and marine diesel engines burning distillate diesel fuel with sulphur content less than 0.5 %wt. UPSOL MARINE 512 is not designed for cylinder lubrication of two stroke crosshead diesel engine.

## PERFORMANCE LEVELS

UPSOL MARINE Series meet API Service Classification CF.

