

# Mobilgard™ 540 AC

**Introducing ExxonMobil's MAN ES Category II cylinder oil specifically formulated to meet the advanced cleanliness requirements of MAN's Mark 9 and newer two-stroke marine engine designs**

A high performance cylinder oil developed for use in slow-speed, two-stroke marine engines operating on 0.10% and 0.50% sulphur fuels, LNG, ethane, methanol and LPG.

Mobilgard 540 AC is a Category II cylinder oil specifically designed to meet the advanced cleanliness requirements for use in MAN's Mark 9 and newer two-stroke marine engine designs. As stated by MAN ES, CAT II 40 BN oils may also be advantageous for MAN Mark 8 engines and lower<sup>1</sup>.

The oil has been engineered using ExxonMobil's balanced formulation approach. This helps ensure outstanding protection at optimum feed rates.



## Formulated with performance in mind



Combats deposits and scuffing-related engine wear associated with low-sulphur fuels



Delivers exceptional cleanliness due to high level of detergency



Ensures performance even in severe operating conditions due to its excellent thermal and oxidative stability

## Quantifiable benefits

Mobilgard 540 AC helps<sup>2</sup>:



Prolong engine life



Minimise maintenance



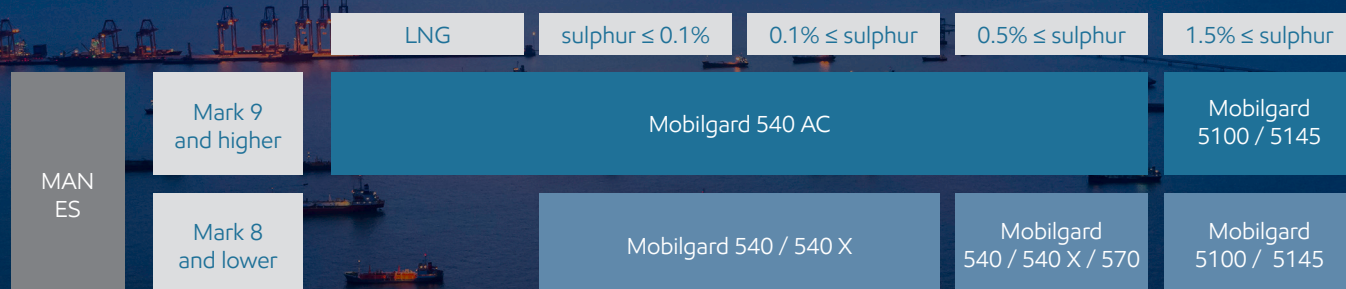
Enhance vessel reliability

<sup>1</sup> Please refer to the latest OEM guidance for up-to-date recommendations.

<sup>2</sup> When compared with a standard 40 BN cylinder oil and no/limited scrape down oil analysis.



# ExxonMobil cylinder oil recommendation based on OEM guidance and extensive experience



These recommendations are based on OEM guidance and ExxonMobil's extensive experience. Please refer to latest OEM's Service Bulletins for more detailed recommendations. Individual engine requirements may vary. Mobilgard™ 570 can be replaced by Category II cylinder oils for cleaning purposes.

## Streamlined inventory – simplified operations

Many vessel operators use a combination of Category I 40BN and Category II 100BN cylinder oils in alternating patterns, based on guidance from MAN ES, to meet the required cleanliness performance. This is far from ideal.

A switch to Mobilgard™ 540 AC offers a single solution, helping vessel operators optimise their inventory and also gain access to a range of performance benefits.

## Maximise cost savings

Mobil Serv<sup>SM</sup> Cylinder Condition Monitoring, used in conjunction with Mobilgard 540 AC, can help vessel operators optimise cylinder oil feed rates while also improving engine protection. The scrape down oil analysis service includes:

- ✓ **Safe, fast, simple and accurate onboard sampling**
- ✓ **Scan-and-go technology for easy sample registration**
- ✓ **Actionable insights within minutes of sample submission**
- ✓ **Tailored lubricant recommendations**

Mobilgard 540 AC is compatible with ExxonMobil's entire range of two-stroke engine cylinder oils in any quantity. Full details of its availability can be viewed on ExxonMobil's Ports & Services Guide: [www.exxonmobilportsandservices.com](http://www.exxonmobilportsandservices.com)



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## Frequently asked questions

- Is Mobilgard 540 AC right for my engine?**  
Mobilgard 540 AC is a Category II cylinder oil specifically formulated to meet the advanced cleanliness requirements for use in MAN's Mark 9 and newer two-stroke marine engine designs. As stated by MAN ES, CAT II 40 BN oils may also be advantageous for its Mark 8 and lower engine designs. Please refer to OEM guidelines for further details.
- Will Mobilgard 540 AC be compatible with my current lubricant?** Yes, it is compatible with ExxonMobil's entire range of two-stroke engine fresh cylinder oils. However, in order to take full advantage of the performance of Mobilgard 540 AC, best practice guidance is to minimise the amount of the prior lubricant in the tank before loading on top.
- What benefits does Mobilgard 540 AC offer to vessel operators?** The lubricant has been designed with outstanding detergency and dispersancy to deliver the advanced cleanliness requirements of modern two-stroke engines while maintaining excellent performance in all other attributes of a premium cylinder oil. Mobilgard 540 AC also possesses high thermal stability, anti-oxidation and anti-wear properties.
- Will Mobilgard 540 AC help me clean up my engine?**  
Engine cleanliness is dependent on a range of factors include fuel type and operating profile. An oil analysis programme, such as Mobil Serv Cylinder Condition Monitoring, can help identify the optimum lubricant feed rate for achieving best results. Removing some deposits may require mechanical process. An experienced ExxonMobil engineer can advise you how this should be approached.

**ExxonMobil**