

Ethomeen T/12

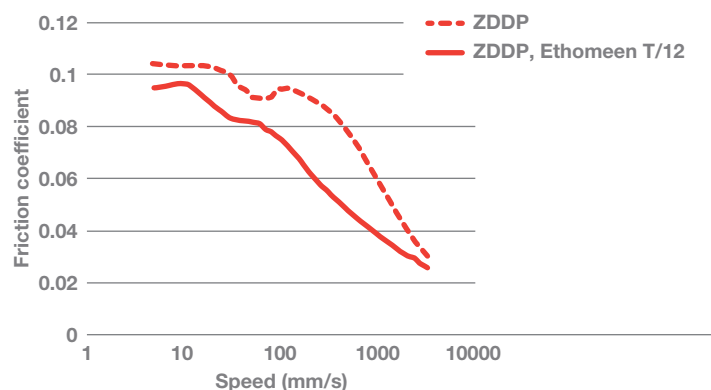
Friction modifier

Fuel economy improvement is a key objective in the development of PCMOs and HDDEOs. One way of improving fuel economy is to use friction modifiers to reduce friction and thereby increasing the fuel efficiency. By choosing the right friction modifier, savings up to 2% of fuel can be achieved. This does not only bring a fuel saving, it also helps reducing CO₂ emissions.

Friction modifiers are commonly used in engine oils, and are added to fluids for automatic and manual transmissions.

MTM friction evaluation

In this graph we compare Ethomeen T/12 in a Group II base oil which includes ZDDP. As can be seen there is a general lowering of the friction across all regions. A change in the friction profile where the friction moves quicker into mixed lubrication which may lead to reduced wear.



Addition of 0.5 wt% of Ethomeen T/12 in base oil including ZDDP. MTM test at 120C and 50/50 slide roll ratio.

In a PCMO or HDDEO (motor oils) or in transmission oils there are many different chemistries which may compete for the surface. To evaluate the

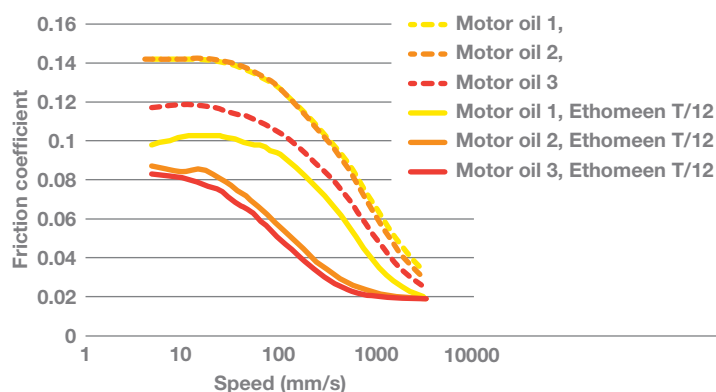


Ethomeen® is a registered trademark in many countries.

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compatibility of Ethomeen T/12 with other performance additives it is has also been assessed in three different fully formulated 'off the shelf' oils. The three oils are: low cost standard motor oil 5W30 (motor oil 1), high end motor oil 5W30 (motor oil 2) and high end motor oil 0W30 (motor oil 3).



Addition of 0.5 wt% of Ethomeen T/12 in 3 different fully formulated off the shelf oil. MTM test at 120C and 50/50 slide roll ratio.

The results show that in all three fully formulated oils the friction is significantly reduced even though the formulations already include friction modifiers. The best improvement is achieved when top treating the 5W30 oils – a reduction of almost 60% is apparent in the mixed region. The additional of Ethomeen T/12 as a top treat to Motor oil 1 and 2 decreases the friction such that they now outperform Motor oil 3 (0W30).

Further Information

For further information, technical service and samples, please contact our nearest AkzoNobel Sales office.

Ethomeen T/12 Product Data Sheet

Application	Additive for engine/transmission oil for improved fuel economy.	
Use	0.3-0.75 wt% is recommended.	
Typical properties	Chemical and physical data	Typical values
	Amine number	156 - 165
	Primary + Secondary Amine	3 % max
	Color	0 - 6 Gardner
	Moisture	1 % max
	Equivalent Mass	340 - 360
	Tertiary Amine	96 % min
	HLB value	10.1 Davies Scale 0-40
	Viscosity	34(50), 29(70) cp C
	Pour point	32 C
	Flash point	>100 C
	Cloud Point	33 C
	Melting point	29 C
	Appearance	Paste at 25°C
	Typical Data are based on our own measurements or derived from the literature. They do not constitute part of the delivery specification.	
Usage	Before adding the Ethomeen T/12 the product should be heated to 50C to ensure homogeneous blending	
Storage and handling	Ethomeen T/12 is available in drums or bulk. Ethomeen T/12 should be stored under cover, protected against rain and direct sunlight.	
Handling and Safety	A Safety Data Sheet is available.	
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