



Resulting BN of Blended Cylinder Oils

With the impending 2020 regulatory changes, many ship operators will have to switch to low sulphur fuel oil to ensure compliance with the new IMO sulphur emission limits.

As vessels switch to the low sulphur fuels, they would have to change their vessel engine lubricants to ensure that their lubricant's BN match the sulphur levels of the new fuels. This minimizes the event of having too much alkalinity in the vessel's cylinders which may potentially disrupt the condition of the liner oil film.

Hence, as part of each vessel's transition plan, ship operators will need to manage their lubricant inventory on board in order to effect the change to the new lubricants.

There inevitably will be some mixing of lubricants between the previously used lubricant (likely a high BN lubricant) and the new lubricant (low BN lubricant).

The tables below show the resulting BN for 4 blends of our higher BN cylinder oils (≥ 70 BN) and lower BN cylinder oils (≤ 40 BN). The resulting "blended" BN level corresponds directly to the mixing ratio by volumes, that is, a 50-50% blend between a BN100 and a BN40 lube oil results in a BN70 lube oil.

The tables will serve as useful guidance for ship operators during the transition period as they manage the switch to the compliant fuel. Certainly, they would be especially pertinent for ships with only one cylinder oil tank; such ships' operators need to understand the resulting BN level given the mix of the different cylinder oil products in their single cylinder oil tank

GULFSEA CYLCARE 50100 VS GULFSEA CYLCARE DCA 5040H

GULFSEA CYLCARE 50100	GULFSEA CYLCARE DCA 5040H	Estimated TBN
10%	90%	46
20%	80%	52
30%	70%	58
40%	60%	64
50%	50%	70
60%	40%	76
70%	30%	82
80%	20%	88
90%	10%	94

GULFSEA CYLCARE 50100 VS GULFSEA CYLCARE ECA50

GULFSEA CYLCARE 50100	GULFSEA CYLCARE ECA50	Estimated TBN
10%	90%	24
20%	80%	32
30%	70%	41
40%	60%	49
50%	50%	58
60%	40%	66
70%	30%	75
80%	20%	83
90%	10%	92



GULFSEA CYLCARE DCA 5070H VS GULFSEA CYLCARE DCA 5040H

GULFSEA CYLCARE DCA 5070H	GULFSEA CYLCARE DCA 5040H	Estimated TBN
10%	90%	43
20%	80%	46
30%	70%	49
40%	60%	52
50%	50%	55
60%	40%	58
70%	30%	61
80%	20%	64
90%	10%	67

GULFSEA CYLCARE DCA 5070H VS GULFSEA CYLCARE ECA50

GULFSEA CYLCARE DCA 5070H	GULFSEA CYLCARE ECA50	Estimated TBN
10%	90%	21
20%	80%	26
30%	70%	32
40%	60%	37
50%	50%	43
60%	40%	48
70%	30%	54
80%	20%	59
90%	10%	65