

KES

Specification of Used Engine Oils for Limited

KES B-M041B

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Remarks

1. Scope of Application

This standard specifies the specification of used engine oils for limited after the engine durability test and field test are performed.

2. Limits on Use

Limits on used engine oil shall be as follows in Table 1, item by item.

Table 1. Scope of Used Engine Oils for Limit

α : value of property test for new oia 1

Items		Disel Engine Oil	Gasoline Engine Oil	Methods Test
Flash Point(℃)		$\alpha \pm 20$		4-1
Viscosity (Cst)	40℃	$\alpha \pm 20\%$		4-2
	100℃	$\alpha \pm 25\%$	$\alpha \pm 35\%$	
Viscosity Index		$\alpha \pm 25\%$		
Amount of Fuel Dilution (Wt%)		5 or less		4-3
Insoluble Content (Wt%)	N-Pentane	$\alpha + 1.5$ or less		4-4
	Benzene	$\alpha + 0.7$ or less		
Neutralization Value (mgKOH/gr)	TAN	$\alpha \pm 3.0$ or less		4-5
	TBN	2.0 or less		
Coolant input Amount (Wt%)	Moisture	0.2 or less		4-6
	Amount of Non freezing Solution	0.2 or less		4-7
Sulfuric Acid Ash Content(%)		$\alpha + 1.0$ or less		4-8
Residual Carbon(Wt%)		$\alpha + 2.0$ or less		4-9
Copper Plate Corrosion (100℃ 24Hr)		2 or less		4-10
Extreme Pressure		Report		4-11
Bubble Performance (m ℓ)	SEQ I	10 or less -0		4-12
	SEQ II	50 or less -0		
	SEQ III	10 or less -0		

Items			Disel Engine Oil	Gasoline Engine Oil	Test Methods
Anticorrosiveness			No rust		4-13
Oil Unity	NBR 120±1℃ 240Hr	Change in Volume(%)	±10		4-14
		Change in Mass(%)	±15		
		Change in Hardness (Hr)	±10		
		External Appearance	No severely changed state		
	Acrycl 130±1℃ 240Hr	Change in Volume(%)	±10		
		Change in Mass(%)	±15		
		Change in Hardness (Hr)	±10		
		External Appearance	No severely changed state		
	Silicon 150±1℃ 240Hr	Change in Volume(%)	±10		
		Change in Mass(%)	±15		
		Change in Hardness (Hr)	±10		
		External Appearance	No severely changed state		
Oxidation IR			25 or less	40 or less	4-15
Metal Component (ppm)		Al	40 or less		4-16
		Si	20 or less		4-17
		Cd	40 or less		4-18
		Fe	100 or less		4-19
		Cu	40 or less		
		Pb	40 or less	100 or less	4-20
		K	50 or less		
		I	20 or less		
		P	Report		4-21
		Zn	Report		4-22
		Na	50 or less		4-16
		Cr	40 or less		4-19
		Sn	40 or less		4-16

3. Sampling Methods

Conform to KS M 2001 (Sampling method for crude oil and petro-products).

However, after the engine is on for about 10 minutes increasing oil temperature, open the drain valve and perform the sampling.