



Pentosin FFL-3

Double Clutch Transmission Fluid for ZF

Description

Pentosin FFL-3 is a special fully synthetic transmission fluid, which has been exclusively developed for the application in the new double clutch transmission (DCT) designed by ZF. This transmission is a highly developed, complex high tech aggregate which puts extremely demanding requirements onto the transmission fluid.

Pentosin FFL-3 has been completely new developed to satisfy the high demand and was adjusted together with ZF to comply with the various challenging specific DCT-performance requirements. In order to

ensure perfect DCT-operation it should therefore by all means be avoided that **Pentosin FFL-3** is being mixed with any other transmission fluid during service.

Approvals

Porsche 0000 043020
ZF TE-ML 11

Classification

The product is not classified as dangerous.

Pentosin FFL-3		Typical Data	
	Unit	Result	Method
Appearance		bright and clear	DIN 10964
Density at 15 °C	kg/m ³	842	DIN EN ISO 12185
Kinematic Viscosity at 100 °C	mm ² /s	7,0	DIN EN ISO 3104
Kinematic Viscosity at 40 °C	mm ² /s	34,7	DIN EN ISO 3104
Viscosity Index		168	DIN ISO 2909
Dynamic Viscosity at -40 °C	mPa*s	7400	ASTM D2983
Flash Point COC	°C	220	DIN EN ISO 2592
Pour Point	°C	-54	ISO 3016
Evaporation Loss 1h at 200 °C	mass %	3	DIN 51 581-1
Taper Roller Bearing Test, shear loss (192 h)	%	6,5	CEC-L-45-A-99
Taper Roller Bearing Test, Viscosity after Shear (192 h)	mm ² /s	6,8	CEC-L-45-A-99
FZG Wear Test A/16.6/90 // A/16.6/120	Failure Load Stage	>12 // >12	DIN 51354-2
FZG Pitting PT (C/9/90) average out of 3 tests	h	201	DIN 51354-2

While handling lubricants the relevant safety rules have to be taken into account. For more detailed information please see the current safety data sheet for this product.