

VALCO T-PROTECT 4.1**Synthetic engine oil 5W-30 E8, E11 HD**

Synthetic engine oil dedicated to heavy-duty engines and public works appliances designed to meet "EURO VI" emissions requirements.

It will provide excellent protection against wear and maintain optimal engine cleanliness.

Its additivation with low content of sulfated ash, phosphorus and sulfur ("Low-SAPS" technology) will guarantee longevity of exhaust gas post-treatment systems.

VALCO T-PROTECT 4.1 has been specially designed to meet requirements of many manufacturers (see performance level below).

It will also be suitable for vehicles for which ACEA E7, E8, E11 or API CK-4 level is recommended.

Specifications

- ✓ ACEA E7, E8, E11
- ✓ API CK-4
- ✓ API SN
- ✓ JASO DH-2
- ✓ Daimler DTFR 15C120 (MB228.52)
- ✓ Daimler DTFR 15C110 (MB228.51)
- ✓ Daimler DTFR 15C100 (MB228.31)
- ✓ MAN M3775
- ✓ Volvo VDS-4.5
- ✓ Renault RLD-3
- ✓ MTU Type 3.1
- ✓ Deutz DQC IV-18 LA
- ✓ Cummins CES 20086
- ✓ Mack EOS-4.5
- ✓ Detroit Diesel DDC 93k222
- ✓ Scania LDF-4
- ✓ Caterpillar ECF-3
- ✓ Ford WSS-M2C213-A1 (level)
- ✓ DAF Extended Drain (level)
- ✓ Iveco 18-1804 TLS E6 (level)

Physicochemical Characteristics

Characteristics	Method	Unit	Typical value	Min.	Max.
Viscosity grade	SAE J300	-	5W-30	-	-
Kinematic viscosity @ 100°C	ASTM D 7042	cSt	12.1	11.9	12.5
Kinematic viscosity @ 40°C	ASTM D 7042	cSt	73	-	-
Viscosity index	ASTM D 2270	-	164	-	-
CCS viscosity @ -30°C	ASTM D 5293	mPa.s	5400	-	6600
HTHS viscosity @ 150°C	ASTM D 4683	mPa.s	3.6	3.5	-
MRV viscosity @ -35°C	ASTM D 4684	mPa.s	22800	-	60000
Density @ 20°C	ASTM D 7042	-	0.852	-	-
Pour point	ASTM D 97	°C	-45	-	-27
Flash point	ASTM D 92	°C	226	-	-
T.B.N.	ASTM D 2896	mg KOH/g	9.8	9.0	10.2
Sulfated ash	ASTM D 874	% mass	0.95	-	1.0
Spectrometric analysis	ICP	ppm			
Phosphorus			770	600	800
Zinc			840	350	-
Calcium			1450	-	1500
Magnesium			730	-	-
Molybdenum			130	-	-
Boron			450	-	-
Sulfur			2200	-	3000
NOACK volatility	ASTM D 5800	% mass	11.9	-	13.0
Colour	ASTM D 1500	-	5.5	-	7.0

Security

See Safety Data Sheet