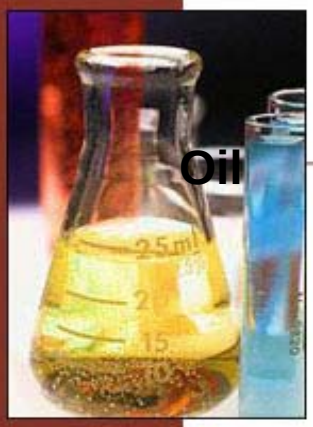

Castorine Tena-Film Super Heavy Duty Motor

API SERVICE CLASSIFICATION SC, SD, SE, SF, CB, CC
MILITARY AND INDUSTRIAL SPECIFICATIONS:
MIL-L-2104A (S-1), MIL-L-2104B, MIL-L-46152
GM-6048-M, FORD ESE M2C 96-F, FORD ESE M2C153-B

SPECIFICATIONS

	SAE 10W-30	SAE 10-10W	SAE 20-20W	SAE 30-30W	SAE 40	SAE 50	SAE 60	SAE 70
Viscosity Index Min.	139	95	95	95	95	95	95	95
Visc.,@ 100° F., sec., Saybolt Universal	345/360	195/200	325/385	450/500	775	1100	1400	2600
Visc.@ 210° F., sec., Saybolt Universal	68	46	56	61	77	93	107	150/160
Visc.,@ 0° F., sec., Saybolt Universal	9000	10000	24000	-	-	-	-	-
A.S.T.M. Color	4	3.5	4	4.5	5.5	4	5	5
Flash, ° F.	390	400	425	435	490	535	550	580
Fire, ° F.	425	450	465	480	535	595	605	630
Pour Pt., ° F.	-35	-25	-25	-15	5	5	5	5
A.P.I. Gravity@ 60° F.	28.9	29.8	29.3	28.4	27.7	27.1	26.8	26
Carbon Res., % Base Stock	0.03	0.09	0.15	0.18	0.18	0.19	0.19	0.3
ASH Content, % by Weight	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Zinc, % by weight	0.137	0.137	0.0137	0.137	0.137	0.137	0.137	0.137
Total Base No. (TBN)	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9

ADDITIVE TREATMENT:
ANTI-SCUFF/E.P. ADDTIVE, CORROSION INHIBITOR, DETERGENT DISPERSANT ADDITIVE, OXIDATION INHIBITOR, Special non-gumming CASTOR LUBRICITY ADDITIVE, POUR PT. DEPRESSANT (SAE 10W-30, SAE 10-10W, SAE20-20W, SAE 30-30W)

The ANTI-SCUFF/E.P. ADDITIVE provides super film strength in the oil.
The CORROSION INHIBITOR imparts bearing protection and anti-rust qualities not found in most motor oils. The DETERGENT DISPERSANT ADDITIVE keeps products of oxidation, sludges etc. in suspension thus avoiding harmful deposits. The OXIDATION INHIBITOR is added to further retard oxidation under severe operating conditions.

The special CASTOR LUBRICITY ADDITIVE:
(a) imparts increased oiliness and reduced friction.
(b) enhances the WETTING POWER of the oil for metal surfaces.
(c) exerts a detergent action on tars, varnish and carbon deposits.

The ANTI-SCUFF/E.P. ADDITIVE and DETERGENT DISPERSANT are the additives that make a multi-purpose crank case oil good for both Gasoline and Diesel Engines. TENA-FILM SUPER HEAVY DUTY MOTOR OIL is designed to prevent wear and sticking of hydraulic valve lifters and keep the engine clean under difficult conditions such as start-stop driving at low temperatures. This type of driving promotes sludging.

RECOMMENDATIONS:

These oils are recommended for all diesel engines except the high output type, such as, Caterpillar D-337 or when poor fuel is used that contain more than 0.5% sulfur.
For these conditions TENA-FILM ALL FLEET MOTOR OIL and TENA-FILM SAE 15W-40 UNIVERSAL ENGINE OIL ARE RECOMMENDED, UNDER A.P.I. "CD" service classifications.

For optimum results, we recommend the following procedure:
1. Completely drain and flush the engine with a good solvent flushing oil, NOT KEROSENE, and replace the oil filter if needed.
2. Fill crankcase to proper level and maintain level with TENA-FILM.

PHYSICAL PROPERTIES AND RELATED DATA

TENA-FILM SUPER HEAVY DUTY MOTOR OILS are high gravity oils of 100% paraffin extraction dewaxed in the refining process to prevent gumming. The oils are extra refined under a High Vacuum method which involves processing of the molecular complexes, under high heat and vacuum, making them exceptionally resistive to oxidation. This produces tough oil with a minimum of light ends. In the refinement stage, only the better molecules of the natural paraffin crude are salvaged, leaving a well balanced, stable chain of molecules that imparts the maximum amount of anti-wear properties, with much greater lubricity and firm strength per SAE grade than other Heavy Duty Motor oils.

TENA-FILM SUPER HEAVY DUTY MOTOR OILS are straight run grades instead of multi-viscosity grades. The multi-viscosity grades, for example, SAE 5-20 and SAE 10-40, etc., are all made from extra light viscosity oils that are artificially thickened with Viscosity Index Improver additives (polymers) to enable ONE grade to operate temporarily over a wide temperature range. These additives break down under shearing action of the engine and the oil reverts to its original light viscosity, causing greater consumption and poorer lubrication. Throughout the history of lubrication, much research has been conducted in an effort to find ways and means of retarding oxidation in both fluid and non-fluid lubricants. It has been determined that oxidation is the principal cause of oil products to break down or change in chemical nature, which in turn, results in sludge formation, gum varnish deposits and corrosion. Progress has been made to improve the condition through selection of certain types of crude petroleum oils and various methods of refining them. However, a majority of the improvements have not been enough to extend the service life of most motor Oils beyond 2500 miles, without being subject to excessive oxidation.

For over forty years, our laboratory has made an intensive study of the problem of oxidation in petroleum products and our research work has resulted in the development of our present day SUPER HEAVY DUTY MOTOR OILS, made only from specially selected straight run, high gravity, high V.I., paraffin, dewaxed petroleum oils of super and limited refinement.

Proof of the exceptionally low oxidation rate of TENA-FILM SUPER HEAVY DUTY MOTOR OILS was decisively established in the field, in addition to numerous laboratory tests. Lab analysis of crankcase draining taken from our salesmen's cars, various taxicabs, dump trucks, earth moving equipment and buses, have consistently shown up amazingly low acid content, after excessive mileage intervals – up to 7800 miles. However, since the individual consumption of it cannot be controlled, due to varying conditions of equipment at the time the oil is placed in service, TENA-FILM can be relied upon to give 2500 miles service before oil change. In new cars and engines in good condition,TENA-FILM SUPER HEAVY DUTY MOTOR OIL can be expected to give 5000 miles service before oil change. The dangerous concentration of oxidized products of used oil is determined by the Acid content. An acid value of 2.0 is considered the limit of service, indicating the need for an oil change.

Another outstanding property of TENA-FILM is its remarkable adhesion to metal and great OILINESS thereby making a tight piston seal on the sides of cylinder walls. It retains body under high heat, fast speeds and heavy loads, while inferior oils thin down like kerosene.

TENA-FILM SAE 10W-30 SUPER HEAVY DUTY MOTOR OIL is an addition to the straight grade series. It is made from mid-range viscosity neutral oil that has low volatility. The trend is away from quadraple multigrades such as SAE 10W-40 and 20W-50 because viscosity loss due to shearing results in higher oil consumption over the life of the oil.

From the standpoint of LONGEVITY OF SERVICE (longer life), INHERENT LUBRICITY, ANTI-WEAR and VERSATILITY OF APPLICATION, TENA-FILM SUPER HEAVY DUTY MOTOR OILS are unsurpassed.