

Automatic Transmission Fluids (ATFs) Information

Automatic transmission fluids (ATFs) are the most complex lubricants in the petroleum industry. Containing as many as 15 components, ATFs represent a careful balance of properties needed to meet the unique requirements of automatic transmissions. In terms of viscosity, they may be described as SAE 5W-20 grade oils with exceptionally good low temperature properties. They contain some of the same types of additives used in engine oils, together with further material to provide special frictional properties and improved oxidation resistance. Because of their excellent low temperature fluidity and anti-wear properties, automatic transmission fluids often find use as hydraulic fluids in industrial equipment and air compressors.

These fluids perform five basic functions:

- Transmit hydrodynamic energy in the torque converter.
- Transmit hydrostatic energy in hydraulic logic control circuits and servo-mechanisms.
- Lubricate shaft bearings, thrust bearings, and gears.
- Transmit sliding friction energy in bands and clutches.
- Act as a heat transfer medium controlling automatic transmission operating temperatures.

Automatic transmission fluid specifications are in a state of flux and now there are several types of fluid specified for North American automatic transmissions. The most widely marketed fluid by far, is DEXRON-III[®] / MERCON ATF[®], a friction modified fluid, recommended for transmission top-up or refill, by most automobile manufacturers for late model vehicles. However, the Ford Motor Company has recently announced, that for 1997 models and beyond, it will require most of its transmissions to be serviced with a new automatic transmission fluid...MERCON[®] V. Although Chrysler allows DEXRON-III[®] ATF fluid to be used for transmission top-up, they prefer that Chrysler ATF+3[®] fluid be used, where a complete change of transmission fluid is required. ATF Type F, a non friction-modified fluid, is still required for 1979 and earlier Ford or other older import cars.