
API Lubricant Service Designations for Automotive Manual Transmissions, Manual Transaxles, and Axles

API GL-1

Lubricants intended for manual transmissions operating under such mild conditions that straight petroleum or refined petroleum oil may be used satisfactorily. Oxidation and rust inhibitors, defoamers, and pour depressants may be added to improve the characteristics of these lubricants. Friction modifiers and extreme pressure additives shall not be used.

API GL-4

Lubricants intended for axles with spiral bevel gears operating under moderate to severe conditions of speed and load or axles with hypoid gears operating under moderate speeds and loads.

Although this service designation is still used commercially to describe lubricants, some test equipment used for performance verification is no longer available.

API GL-5

Lubricants intended for gears, particularly hypoid gears, in axles operating under various combinations of high-speed/shock load and low-speed/high-torque conditions. Lubricants qualified under SAE J 2360 (formerly known as U.S. Military Specification MIL-PRF-2105E) satisfy the requirements of the API GL-5 service designation, although the API designation does not require military approval.

API MT-1

Lubricants intended for nonsynchronized manual transmissions used in buses and heavy-duty trucks. Lubricants meeting the requirements of API MT-1 service provide protection against the combination of thermal degradation, component wear, and oil-seal deterioration, which is not provided by lubricants in current use meeting only the requirements of API GL-1, 4, or 5.