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According to company records, this oil had to meet the following material specifications:

The material desired should be a commercial grade castor oil chemically treated to produce the proper characteristics for a satisfactory shock absorber oil.

1. The material shall be free from acid, alkali, moisture, tarry or suspended matter, thickeners, or any other foreign matter.
2. Specific gravity at 15.5°C shall be .954 ± .005.
3. Viscosity (Saybolt Universal Seconds)

   At 100°F — 1350 ± 5 seconds
   At 130°F — 625 minimum
   At 210°F — 144 ± 5 seconds
4. Cold test shall be —25°F.
5. Flash (open cup) shall be 460°F min.

   Fire shall be 535°F min.
6. Carbon residue shall not exceed 0.40%.
7. Saponification valve, 185-195.
8. Iodine valve, 70-75.
9. Acid value, 8 maximum.

This material was supplied by Standard Oil Company and Spencer Kelly Sons, Inc., and was last purchased by Ford in 1946. It was finally obsoleted in 1953. See the chart for data and release dates on other shock absorber fluids.

WHAT IS RECOMMENDED TODAY?

If you have your shocks mounted on the car and you have them filled, continue to use the same fluid because the fluids shown on the chart should not be intermixed. If you wish to change fluid, the shocks should be disassembled and thoroughly cleaned, following the guide lines suggested in Ray Jackson's article.

Should you wish to use one of the shock absorber oils released by the company, M-4633-B, if any can be located, is recommended over the others. Contrary to the belief of many Model "A" collectors, the glycerine and alcohol which was recommended during the Model "A" production, is the least desirable. The glycerine base fluids oxidize rapidly and give no corrosion protection.

By today's standards, the best shock absorber oil for Houdaille shocks, recommended by hydraulic oil experts, is SAE 90 transmission and axle lubricant. This oil base fluid has a SAE 50 viscosity, can withstand extreme pressure, does not oxidize, and it contains anti-scuff and anti-corrosion additives.

Another recommendation is SAE 50 engine oil. This oil has similar qualities and a better cold test characteristic, but it is not as readily available.

Model "A" owners who wish to drive their cars during freezing weather are advised to open the needle valve an additional ⅛ turn (counterclockwise). Addition of a thinner fluid is not recommended.

In conclusion, I would like to point out that the majority of the shocks on our "A's", even though restored, have greater clearance between parts, due to wear, than did the new shocks of 37 years ago. Therefore, a higher viscosity oil is necessary to restore good performance.

FORD NUMBER	TITLE	RELEASE DATE	APPROX. VISCOSITY*	COMPOSITION
M-564	Shock absorber oil	5-25-29	SAE 50	Mineral Oil
M-1046-A	Houde Shock absorber mixture	6-10-30	SAE 30	90% glycerine 10% alcohol
M-1046-B	Houdaille Shock absorber fluid	2- 3-32	SAE 50	Glycerine non-crystalizing sugar (dextrine) alcohol
M-1046-C	Houdaille shock absorber fluid (low viscosity)	4-12-32	SAE 40	Same as M-1046-B
M-1046-D	Houdaille shock absorber fluid (high viscosity)	9-16-35	SAE 20	Same as M-1046-B
M-4633-A	Shock absorber oil	4- 6-37	SAE 60	Mineral Oil
M-4633-B	Shock absorber oil	1-11-38	SAE 70	Castor Oil
M-4633-C	Shock absorber oil	2- 1-38	SAE 50	Mineral Oil

*These readings are approximate because they were converted to today's engine oil specifications which are taken at 0°F and 210°F as compared to the old specifications taken at 100°F and 130°F.