



**Eaton
Hydraulics
Division**

Technical Data Sheet

Biodegradable Oil Use with Char-Lynn® Steering Units

Objective

To determine the performance and wear life of steering control units using Rape Seed Oil (Biodegradable Oil).

Test Oil

The actual oil used in this test was PLANTOHYD 40 by Fuchs Hydraulikfluid. An equivalent oil is Mobile RL 1609. These oils are derivatives of rape seed oil with additives. These fluids significantly reduce the environmental pollution caused by leaks and spills. This is confirmed by the CEC-L-33-T-82 test which established a greater than 96% biodegradation within 21 days.

Test Procedures

The steering unit was performance and endurance tested. Performance tests were taken prior to, mid-time, and after the endurance test.

Performance test

The performance tests were run per standard Eaton production performance test specification ATS-195 Sec. 12, code 24.

Endurance test

Endurance test was conducted with the rape seed oil at 170-180 deg. F. per ATS-170. Test stand pressures, torques, and RPM's were instrumented and recorded periodically throughout the test.

Conclusions and Recommendations

The use of a rape seed derived hydraulic oil caused little change in the performance, wear, and sealing in an open center steering unit. The use of a rape seed derived hydraulic oil such as PLANTHYD 40 or MOBIL RL 1609 is approved for use in a steering valve.

Eaton Corporation **Hydraulics Division**, 15151 Highway 5, Eden Prairie, MN 55344 Telephone (612) 937-9800

Eaton G.m.b.H. **Hydraulics Division** ✉ 100 410 • D-5620 Velbert 1 West Germany ☎ 49-2051-2070

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