PYDRAUL® Product Assessment

Summary:

No adverse results from the mammalian studies we have completed to date.

We have an adverse result from an aquatic subchronic study of PYDRAUL 50E in egg fry trout at a level of 8 ppb. However, we suspect this is due to triphenyl phosphate which is present at 35-40%.

Triphenyl phosphate is biodegradable and disappears in the River Die Away study in 48 hours.

Triphenyl phosphate has been detected in a water sample from our monitary program at a level of 0.7 ppb, which is less than 1/10th of the reported effect level in trout of 8 ppb.

t Butyl Phenyl Phosphate

Little work has been done in this area, although acute trout studies are planned and a subchronic egg-fry trout study similar to the PYDRAUL 50E study.

No mammalian studies have been started.

The following studies are or have been conducted to insure the acceptability of the PYDRAUL line of products in the marketplace.

A. Mammalian

Acute studies - including 6 hour vapor inhalation completed on all products.

Demyelination studies completed.

Ames study completed on NC 220 and NCP.

Subacute oral 90 day feeding studies on rats completed for PYDRAUL 30E, 90E and 115E (NCP).

The following studies are underway on the base stocks:

- 90 day feeding study rate (NC 220 only)
- Teratology
- 21 day dermal study
- Mouse Lymphoma Study
- Human Patch Study

B. Wildlife

Acute oral studies on bobwhite quail and mallard duck are planned for 2nd quarter 1978 on PYDRAUL 50E (MC 220) and 115E (MCP).

C. Aquatic Toxicity

Acute Studies:

1. LC_{50}'s on PYDRAUL 50E and all its components have been determined on Rainbow Trout by Columbia Fish Pesticide Lab (CFPL) in 1977.
2. LC_{50}'s on PYDRAUL 50E have been determined on Bluegills, Channel Catfish, Fathead Minnows, Rainbow Trout and Scud by CFPL in 1974.
3. LC_{50}'s on PYDRAUL 115E have been determined on Bluegills, Channel Catfish and Rainbow Trout by CFPL in 1974.
4. LC_{50}'s on Rainbow Trout and Bluegill have been determined on Triphenyl Phosphate.
5. LC_{50}'s on Rainbow Trout, Fathead Minnows and Daphnia are being started on PYDRAUL 29ELT, 90E, 230C, 312C and 320C. The data will be available January '78.

Sub Chronic Studies

Studies were completed by CFPL on egg-fry rainbow trout on PYDRAUL 50E. An effect level of 8 µg/l was found.

These studies will be repeated by CFPL on MC 220 base, MCP base, triphenyl phosphate, diphenyl nonbyphenyl phosphate, and diphenyl cumylphenyl phosphate. Studies will start in January and we expect results in April.

Preliminary algal growth studies will be completed by the end of the year on PYDRAUL 50E and 115E.

D. Environmental Fate

We have data on Triphenyl Phosphate, MCP and MC 220 for the following tests:

Biodegradation (SCAS, CO_2 Evolution and River die away)

Partition Coefficients

Water Solubilities

We will be doing adsorption studies on HCP and HC 220 in 1978. Also, we plan on obtaining some Vapor Pressure data on HCP and HC 220 in 1978.

E. Future Studies

The following studies have been proposed in 1979-80.

1. Chronic Invertebrate (Daphnia)
2. Toxicity of a partially degraded sample.

F. Monitoring

Various sites around the country have been sampled for water, fish and sediment analysis. This work will be completed in the 1st quarter of 1978. Preliminary data on the water samples indicate that neither HCP nor HC 220 were detected.

The detection limit for these is approximately 2 ppb.

Triphenyl phosphate was detected in some water samples. The highest level reported was 0.7 ppb. The detection limit for TPP is approximately 0.1 ppb.