

US EPA ARCHIVE DOCUMENT

VALIDATION SHEET

TEST ID NO.: BL/B/1631

TEST TYPE: 96-h LC₅₀: Rainbow Trout (Salmo gairdneri)

CHEMICAL NAME: Vantocil 1B

FORMULATION: 20% aqueous solution

VALIDATOR: Ann Rosenkranz

DATE: September 20, 1979

CITATION: Determination of the Acute Toxicity to Rainbow Trout of Vantocil 1B in Freshwater, February 1975, by Brixham Laboratory, ICI, Ltd.

VALIDATION CATEGORY: Supplemental

RESULTS: 96-H LC₅₀ = 13.5 mg/l
 48-h LC₅₀ = 15.0 mg/l
 24-h LC₅₀ = 17.5 mg/l

Results expressed as Vantocil 1B (v/v)

Conc. (ppm)	% Cumulative Mortality*			
	24h	48h	72h	96h
47	100	100	100	100
33	100	100	100	100
22	100	100	100	100
15	0	40	50	100
10	0	0	0	0
0	0	0	0	0

* Ten fish per concentration.

- The toxicity of Vantocil 1B was studied at 13°C in rainbow trout using a continuous flow-through system. The chemical was fed to the test vessels by a system of peristaltic pumps. Complete replacement of the soft water in the 20 liter vessels occurred in less than 3 hours. The pumping rates of the dilution water and the concentrated Vantocil 1B solution were monitored twice daily.

2. A toxicity curve was constructed by plotting ET50 values (estimated time for 50% of the fish to die at each concentration) against the concentration tested on log scales. The 24, 48, and 96 hour LC₅₀ values were then read off the curve.

VALIDATION CATEGORY RATIONALE:

The study is classified as supplemental because although it is scientifically sound, it does not follow the recommended EPA protocol. The reasons include: use of the formulated product; fish with a mean weight of 16.4 g (not 0.5 to 5 g); use of 20 liter, not 30 liter, tanks; no recording of fish behavioral reactions; acclimation for only 6 days prior to testing; too narrow a range of test concentrations, such that there were no partial kills at 96 hours; failure to use a standard method to calculate the LC₅₀ values.

REPAIRABILITY:

The study cannot be repaired to core. It must be redone according to the EPA protocol (1975).

STUDY VALIDATION

DATA REVIEW NUMBER: ES-G-1

TEST: 96 hr. fish acute LC₅₀

SPECIES: rainbow trout

RESULTS: 24 hr., 48 hr, and 96 hr LC₅₀ values =
17.5, 15.0 and 13.5 mg/l respectively expressed as
Vantocil 1B (v/v).

CHEMICAL: Vantocil 1B (20% a.i.)

TITLE: Determination of the Acute Toxicity to Rainbow Trout of
Vantocil 1B in Freshwater, February 1975, by Brixham
Laboratory, ICI, LTD.. BL/B/1631.

ACCESSION NO: 234289, Report #C 22

STUDY DATE: February 1975.

RESEARCHER: Hill, R.W., B. G. Maddock, B. Hart.

REGISTRANT: Imperial Chemical Industries Ltd.

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: Doubtful

ABSTRACT:

The acute toxicity of Vantocil 1B was determined using a continuous flow through bioassay system. Vantocil 1B is a 20% aqueous solution of Vantocil. The LC₅₀ are as reported above.

A toxicity curve was constructed by plotting ET50 (Estimated time for 50% death @ tested values), values against the concentration tested on log scales. The appropriate 24-48 and 96 hr LC₅₀ values were then read off the curve.

Dilution/dosing rates were monitored twice daily (specific results not given). The maximum deviation in the dilution ratio for both series did not exceed 1 part in 40 for any of the concentrations tested.

Dissolved oxygen, water hardness, pH and temp levels were all acceptable throughout the test.

The test is repairable to core if, 1) an LC_{50} calculated by conventional means can be calculated and reported (data and all) and 2) Concentrations off toxicant in the test chambers throughout the test.

NOTE: The material used was the formulated product; thus, upgrading this study to core would also depend on the need for the study.

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