

TOXICITY TO AQUATIC INVERTEBRATES (*Artemia sp*)

TEST SUBSTANCE

Identity: Perfluorooctanesulfonate; may also be referred to as PFOS or FC-95. (1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, potassium salt, CAS # 2795-39-3)

Remarks: The test substance is a white powder of uncharacterized purity.

METHOD

Method: Draft International Standards Organization (Vanhaecke and Persoone, 1981)

Type: Acute static

GLP: No

Year completed: 1985

Species: *Artemia sp.*

Artemia source: Salt lake Brine Shrimp Inc.

Artemia age at test initiation: naupuli < 24 hours old.

Exposure period: 48-hours

Analytical monitoring: Dissolved oxygen, pH, conductivity

Statistical methods: Not noted. Element values were calculated for each replicate series, but not combined for the whole study. A cumulative mortality-concentration plot was used to estimate the LC₅₀.

Test conditions:

Dilution water: 30 parts per thousand NaCl solution

Dilution water chemistry (initial):

pH: 8.0 – 8.2

D.O.: > 6 mg/L

Stock solution preparation: 1000 mg/L; noted as cloudy

Exposure vessels: Not noted; solution volume 10 mL

Number of replicates: 3

Number of organisms/replicate: 10

Number of concentrations: 6 plus a blank control

Water chemistry during the study:

Dissolved oxygen ranges (test and control):

> 6.0 mg/L

pH (test and control)

8.0 – 8.2

Test temperature range (0 – 48 hours)

21 - 21°C

Element basis: mortality

RESULTS

Nominal concentrations: 1, 2, 3, 5, 10, 20 mg/L

Element values (95% confidence interval) calculated per replicate:

48-hour EC₅₀ = 9.4 (7.4 – 12.1) mg/L

48-hour EC₅₀ = 9.4 (7.3 – 12.2) mg/L

48-hour EC₅₀ = 8.9 (6.7 – 11.9) mg/L

Mortality of controls: None

DATA QUALITY

Reliability: Klimisch ranking = 2. This study satisfied all criteria for quality testing at the time performed, but actual concentrations were not measured. Results were based on nominal concentrations. Additionally, sample purity was not adequately characterized.

REFERENCES

This study was conducted by Beak Consultants Limited, Mississauga, Ontario, Canada for Panarctic Oils Ltd, Calgary, Alberta, Canada.

OTHER

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Last changed: 6/12/01