

Telomer Research Program



Report Title: 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-Fish (Zebrafish), Acute Toxicity Test, Static, 96h, Limit Test with the Water Accommodated Fraction (WAF)

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Study Objective: Determination of the acute toxicity of the water accommodated fraction (WAF) of 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, to zebrafish in a limit test conducted according to OECD Guideline No. 203 (1992).

Materials and Methods: A static limit test was conducted with the water accommodated fraction of the test substance. Tap water of local origin was used for holding and testing. To coat the test vessel, a suspension of 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, with a nominal loading of 100 mg/L was shaken for 96 hours at 20 °C. After phase separation about 10 L per test replicate was transferred from the clear liquid phase to a glass aquarium covered with a glass top. After 14 days of pre-coating, the aquarium was emptied. The water accommodated limit test solution was prepared as above and the clear supernatant representing the WAF was used for the test. During the 96 h test, thirty test organisms were exposed to the water accommodated fraction and the control (one replicate per test concentration and control). Body weight and total length of a representative number of fish was determined at test start. Fish were randomly introduced to replicates and observations were made at 24 h intervals. The limit test concentration and control were analyzed for the test substance by gas chromatography with mass spectrometric detection.

Findings: Water quality parameters (pH and oxygen-saturation) were measured at 24 hour intervals and were determined to be within acceptable limits. The initial mean measured test substance concentration was 0.14 mg/L while the test substance concentration at the end of the test was below the detection limit of 0.009 mg/L. Sorption to the glass walls of the test vessels was unlikely as the walls were already pre-coated before the initiation of the test. The concentrations leading to 0 and 100 % mortality (LC₀ and LC₁₀₀) as well as the no effect levels (NOEC) after 96 h were determined based on initial mean measured concentrations of the test substance. The toxicity of 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, is summarized in Table 1.

Table 1: Endpoint Values with 95 % Confidence Intervals

Test duration (h)	LC ₅₀ [mg/L]	P=95 % [mg/L]
24	> 0.14mg/L	not applicable
48	> 0.14 mg/L	not applicable
72	> 0.14 mg/L	not applicable
96	> 0.14 mg/L	not applicable
96	LC ₁₀₀ > 0.14 mg/L	not applicable
96	LC ₀ = 0.14 mg/L	not applicable
96	NOEC = 0.14 mg/L	not applicable

Conclusion: In this study, 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-, did not cause effects to zebrafish after 96 hours when tested at the water accommodated fraction limit test concentration of 0.14 mg/L. The NOEC (96 hour) was 0.14 mg/L based on initial measured concentrations.