

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 Saturated Solution

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Study Objective: Determination of the acute toxicity of a saturated solution 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.

Materials and Methods: A static limit test was conducted with a saturated solution 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 saturated limit test solution was prepared as above. After shaking, the suspension was centrifuged and the clear supernatant was used for the test. During the 96 h test, thirty test organisms were exposed to the saturated limit test solution 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 and final mean measured test concentrations (Day 0, 4) were 0.18 mg/L and 0.0063 mg/L, respectively. Sorption to the glass walls of the test vessel 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 (0.18 mg/L). 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	> 0.18 mg/L	not applicable
48	> 0.18 mg/L	not applicable
72	> 0.18 mg/L	not applicable
96	> 0.18 mg/L	not applicable
96	LC ₁₀₀ > 0.18 mg/L	not applicable
96	LC ₀ = 0.18 mg/L	not applicable
96	NOEC = 0.18 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-heptafluoro-, did not cause effects to zebrafish after 96 hours when tested at the saturated solution limit concentration of 0.18 mg/L. The NOEC (96 hour) is 0.18 mg/L based on initial measured concentrations.