

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-Alga, Growth Inhibition Test with *Scenedesmus subspicatus*, 72h, Limit Test with the Saturated Solution

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Study Objectives: To determine the effects on growth rate and biomass production with 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 the unicellular freshwater green alga *Scenedesmus subspicatus* according to the principles of OECD Guideline 201.

Materials and Methods: The study was conducted under static conditions over 72 hours with an initial cell density of nominally 10^4 cells/mL and a saturated solution limit test concentration containing 0.20 mg/L of the test substance. The test vessels were coated with the test substance for 14 days (23 ± 2 °C) before the initiation of the test. At the end of the coating period, the flasks were emptied and used for the test. For the preparation of the saturated solution a suspension with a nominal loading of 100 mg/L was shaken and centrifuged. The clear supernatant was used for the test. Incubation was performed in 500 mL Erlenmeyer flasks with test medium. Three replicates were tested for the limit test concentration with 6 replicates for the control. Cell density was measured via Chlorophyll-a-fluorescence at the beginning of the test and every 24 hours during the test. No self-fluorescence was found at the saturated solution. The limit test concentration and control were analyzed by gas chromatography with mass spectrometric detection at test start and test end. The growth rate, the inhibition of biomass and the rate related inhibition after 72 h were calculated from the cell density values. Test of growth rate and biomass integrals, respectively, were carried out for the determination of statistically significant differences compared to control replicates.

Findings: The effects of 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-based on the initial measured concentrations are summarized in Table 1. Microscopic evaluation of the cells at the start and end of the incubation period revealed no morphological abnormalities. At the end of the test, the concentration of the test substance was below the detection limit of 0.009 mg/L.

Table 1: NOEC/LOEC and EC₅₀ Values (0-72 h) of Biomass Inhibition and Rate – Related Inhibition

	Inhibition of biomass growth [mg/L]
E _b C ₅₀	>0.20
95 % confidence interval	Not applicable
LOEC	>0.20.
NOEC	0.20
	Rate-related inhibition [mg/L]
E _r C ₅₀	>0.20
95% confidence interval	Not applicable
LOEC	>0.20
NOEC	0.20

Conclusion: In this study, 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluoro-, was found not to inhibit the growth of the freshwater green alga *Scenedesmus subspicatus*, at the saturated solution limit test concentration of 0.20 mg/L based on measured concentrations of the test substance.