Technical Information

Stepan

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ECOTOXICOLOGY OF ALKANE SULFONATES

Applicable to these current Stepan products:

BIO-TERGE® PAS-7S	BIO-TERGE® PAS-8S	

Toxicological Information:

Test/Conditions	Results/Classification	References
Acute Aquatic Toxicity (fish)(96 hrs.)	For C_8 and greater $LC_{50} \geq$ 10 mg/l for C_{10-14} LC_{50} = 1-10 mg/l for C_{16} and greater EC_{50} < mg/l	HPV Assessment (1)
Acute Aquatic Toxicity (daphnia)(48 hrs.)	For $C_8 - C_{12}$ EC_{50} = 421 mg/l for C14 $EC_{50} \geq$ 60 mg/l	HPV Assessment
Acute Aquatic Toxicity (algae)(72 hrs.)	For C12 to C_{14-15} EC_{50} = 4.6 mg/l to > 120 mg/l	HPV Assessment
Long Term (chronic)(fish)	42-d-NOEC > 1.36 mg/l (C_{12}) Larval test	HPV Assessment
Long Term (chronic)(rotifer)(48 hrs.)	EC_{20} = 4.5 mg/l	HPV Assessment
Long Term (chronic)(algae)	NOEC > 30 mg/l (C_{12})	AS HPV Assessment

LC50/ EC50 = Lethal/ effective concentration to 50% of organisms.
NOEC – No observed effective concentration.
As with Alkyl Sulfates, the most important influencing parameter for aquatic toxicity is the chain length of the carbon chain.

References:

1. Alky Sulfates, Alkane Sulfonates and Alpha-Olefin Sulfonates: SIDS Initial Assessment Report, 2007.

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