



ECOTOXICOLOGY OF ALPHA OLEFIN SULFONATES (AOS)

Applicable to these current Stepan products:

BIO-TERGE® AS-40	BIO-TERGE® AS-40 CG	BIO-TERGE® AS-40 CG-K
BIO-TERGE® AS-40 CG-P	BIO-TERGE® AS-40 CG-PN	BIO-TERGE® AS-40 HA
BIO-TERGE® AS-40 HP	BIO-TERGE® AS-40A	BIO-TERGE® AS-40K
POLYSTEP® A-18	STEPANTAN® AS-1216	BIO-TERGE® AS-90 BEAD
POLYSTEP® A-18S	POLYSTEP® A-18-LV	STEPANTAN® AS-12
STEPANTAN® AS-18		

Applicable to these inactive Stepan products:

STEPANTAN® 39N	STEPANTAN® AS-40	1618 AOS
STEPANFLOW® 30	STEPANFLOW® 70	

Toxicological Information:

<u>Test/Conditions</u>	<u>Results/Classification</u>	<u>References*</u>
Acute Aquatic Toxicity (fish) (96 hr.)	LC50 (Lethal Concentration) > 1 to 10 mg/l (moderately toxic)	ECHA REACH Dossier, EHSMS, HPV Assessment
Acute Aquatic Toxicity (static) (D. magna) (48 hr.)	LC50 > 1 to 10 mg/l (moderately toxic)	ECHA REACH Dossier, HPV Assessment
Acute Aquatic Toxicity (green algae) (72 hr.)	EC50 (Effective Concentration) >1 mg/L (moderately toxic)	ECHA REACH Dossier, EHSMS
Chronic Toxicity to Fish	NOEC > 1 mg/L	EHSMS, HPV Assessment
Chronic Toxicity to Invertebrates (Daphnia)(21 days)(semi-static)	NOEC (measured) > 1 to 10 mg/l	ECHA REACH Dossier, HPV Assessment
Chronic Toxicity to Alga	NOEC > 1 mg/L	ECHA REACH Dossier

Chronic Aquatic Toxicity (midges) (2-generation exposure)	No effect (NOEC) on first or second generation was found at 4.5 mg/l	EHSMS
Toxicity to microorganisms (Activated sludge respiration inhibition test) (3 hr)	EC50 = 230 mg/L	ECHA REACH Dossier
Germination/Growth Study (plants) (does: 10, 25 and 40 mg/l)	No significant difference in germination /growth up to 40 mg/l	EHSMS

NOEC = No Observed Effect Concentration

References:

*ECHA REACH Dossier for CASRN 68439-57-6, EC No. 931-534-0.

* Environmental and Human Safety of Major Surfactants (EHSMS), Vol. 1, Anionic Surfactants, Part 4. Alpha Olefin Sulfonates. Final Report to: The Soap and Detergent Association, August 1993.

*Alkyl Sulfates, Alkane Sulfonates and Alpha-Olefin Sulfonates: SIDS Initial Assessment Report, 2007

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