



MAMMALIAN TOXICOLOGY OF ALPHA OLEFIN SULFONATES (AOS)

Applicable to these current Stepan products:

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

Applicable to these inactive Stepan products:

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

Toxicological Information:

<u>Test/Conditions</u>	<u>Results/Classification</u>	<u>References</u>
Acute Oral Toxicity (rat) (14 day)	LD ₅₀ (Lethal Dose) ranges from 1300-2400 mg/kg but less than 5 g/kg (slightly toxic orally)	EHSMS1, CIR2, HPV Assessment (3)
Acute Dermal Toxicity (rabbit) (14 day)	LD ₅₀ >2000 mg/kg (slightly toxic dermally)	HPV Assessment
Primary Skin Irritation (rabbit) (24 hr. exposure) n=6	PII* = 4.4/8 (moderately irritating to skin @ 10% active)	Stepan Study No. 82-003J
Primary Irritation Patch Test (human) n=19	Slight skin irritation @ 1% active	Stepan Study No. 80-018A, HPV Assessment
Dermal Sensitization (human) (closed patch) n=10	Not a dermal sensitizer	Stepan Study No. 80-017C, EHSMS, HPV Assessment
Primary Eye Irritation (rabbit) (@ 24 hr.) n=6	Moderate eye irritation at 10% active and slight irritation at 1% and 5%	Stepan Study No. 82-003K, EHSMS, CIR HPV Assessment

Mutagenicity Study (Ames test)	Not mutagenic	EHSMS, HPV Assessment
Chronic Toxicity/Carcinogenicity (rat) (diet) (2 years)	No increased incidences of tumors in rats fed up to 500 ppm	EHSMS, CIR, HPV Assessment
Repro/Development Toxicity	No repro/developmental effects observed. The NOAEL was 600 mg a.i./kg bw/day both for maternal and developmental toxicity	HPV Assessment

*PII = Primary Skin Irritation Index

**NOAEL= No Observed Adverse Effect Level

Expert Panel Review of sodium alpha-olefin sulfonate: The Cosmetic Ingredient Review (CIR) Expert Panel concluded that sodium alpha -olefin sulfonate is safe as used in rinse-off products and safe up to 2% in leave on products. The concentration of the gamma sultone impurity (potent sensitizer) of leave on or rinse-off formulation is limited to: unsubstituted alkane sultones = 10 ppm; chlorosultones = 1 ppm and unsaturated sultones = 0.1 ppm.

References:

1 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.

2 Sodium Alpha-Olefin Sulfonates, Cosmetic Ingredient Review (CIR), Final Report 1996.

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

BIO-TERGE® ; POLYSTEP® ; STEPANTAN® are registered trademarks of Stepan Company.

Last Update: 12.1.11

Revision Reference: TX022.06

Last Modified by: Barbara Gomez on 12/01/2011 12:33:07 PM