Technical Information

Stepan

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MAMMALIAN TOXICOLOGY OF ALPHA SULFO METHYL ESTERS (SMES)

Applicable to these current Stepan products:

ALPHA-STEP® BSS-45	ALPHA-STEP® MC-48	ALPHA-STEP® PC-48
ALPHA-STEP® PS-65	ALPHA-STEP® PS-85P	

Applicable to these inactive Stepan products:

ALPHA-STEP® BSN-15	ALPHA-STEP® ML-40	
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Toxicological Information:

Test/Conditions	Results/Classification	References
Mammalian Toxicology:		
Acute Oral Toxicity (rat) (gavage) (14 day) n=5/sex/dose		
a. neat material (waxy solid)	LD ₅₀ (Lethal Dose) > 2000 mg/kg (slightly toxic orally)	Stepan Study No. 94-006A
b. liquid (36.34%) active)	LD ₅₀ > 5 g/kg (practically non-toxic orally)	Stepan Study No. 93-008C
Acute Dermal Toxicity (rat) (14 day) n=5/sex/dose (neat material – waxy solid)	LD ₅₀ > 2000 mg/kg (slightly toxic dermally)	Stepan Study No. 94-006B
Primary Eye Irritation (rabbit) (14 day) n=6		
a. neat material (waxy solid)	MMS ¹ = 61/110 (severely irritating to eyes)	Stepan Study No. 94-006C
b. liquid (36.34% active)	MMS = 39/110 (severly irritating to eyes)	Stepan Study No. 93-008A

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Test/Conditions	Results/Classification	<u>References</u>
c. liquid (10% active)	MMS = 39/110	Stepan Study
	(moderately irritating to eyes)	No. 95-007A
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Primary Skin Irritation		
(rabbit) (4 hr. contact time)	$PII^2 = 0.5/8$	Stepan Study
II=0	(minimally irritating to skin @ 4 hr.	No. 94-006D
a. neat material	contact time)	140. 54 000B
(waxy solid)	oomaar iiiio)	
	PII = 6.42/8	Stepan Study
	(severely irritating to skin @ 24 hr.	No. 93-008B
c. liquid (36% active)	contact time)	
	DII 0.5/0	
	PII = 0.5/8	Stepan Study
d. liquid (10% active)	(minimally irritating to skin @ 4 hr. contact time)	No. 95-004B
d. liquid (10% active)	contact time)	
Sensitization Study	Not a sensitizer	Stepan Study
(Magnesson-Kligman)	(according to ED labeling	No. 94-006E
(guinea pig) (neat material)	regulations)	
Repeat Insult Patch Test	Not a sensitizer @ 0.75%	Stepan Study
(Dermal sensitization Study) (human)		No. 95-001A
n=103		
A 28-day Subchronic Oral Toxicity (neat		Stepan Study
material)	(gastric effects only)	No. 94-006J
(rat) (gavage) n=10/dose		
(doses: 15, 150, 1000 mg/kg/day)		
Micronucleus Test in the Mouse	Non-genotoxic under the	Stepan Study
(mouse)	conditions of the test.	No. 94-006K
n=10/dose		
(neat material)		
Reverse Mutation Assay	Non-mutagenic under the	Stepan Study
(Ames Test)	conditions of the test.	No. 94-006L
(neat material)		

References:

- 1. HPV challenge program submission for Fatty Acid, C12-18 Me Esters, Sulfonated, Na Salts. Nov. 2008.
- 2. Gode, von P., Guhl, W., and Steber, J., Oekologische Bewertung von -Sulfofettsaeremethylester. Fat Sci. Technol., 1987, 89: 548-552.
- 3. OECD SIDS Hexadecanoic Acid, 2-Safo, 1-Methylester, Sodium Salt, 2003.
- 4. Masuda, M., Environmental Aspects of Detergent Materials-Biodegradation of Detergent Surfactants. Oils-Fats-Lipids, 1995, 3:649-653.
- 5. Steber, J., and Wierich, P., The Environmental Fate of Fatty Acid Sulfomethyl Esters. Tenside Surf. Det., 1989, 46: 406-411
- 6. European Directive 67/548/EEC, Annex VI, 5.2.1.3.

ALPHA-STEP® is a registered trademark of Stepan Company.

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