



## BIODEGRADATION OF BRANCHED ALKYL BENZENE SULFONATES

### Applicable to these current Stepan products:

NINATE® 401 POLYSTEP® A-11 POLYSTEP® A-17	NINATE® 401A POLYSTEP® A-16 STEPANTAN® H-100	NINATE® 411 POLYSTEP® A-16-22
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### Biodegradation Information:

Considerable information regarding the biodegradation characteristics of branched alkylbenzene sulfonates (BABS) is presently available in the literature. Although a number of studies have shown that BABS compounds will be completely biodegraded in the environment, biodegradation rates for these compounds are, in general, significantly slower than those exhibited by the linear alkylbenzene sulfonates (LAS).

Primary biodegradation rates for BABS typically range between 75-85% in 30 to 40 days. Ultimate or complete breakdown using radio-labeled BABS has been shown to reach 98% in soil tests.

### References:

\* Swisher, R.D., "Surfactant Biodegradation", Vol. 18, 2nd Ed., Marcel Dekker, Inc., 1987, pp 424-451, 751-781.

\* Arthur D. Little, Inc., "Environmental and Human Safety of Major Surfactants, Volume 1. Anionic Surfactants, Part 1. Linear Alkylbenzene Sulfonates", Final Report to the Soap and Detergent Association, February, 1991.

\* Sweeney, W.A. and Anderson, R.G. "Biodegradability of Alkylbenzene Sulfonates", JAOCS, Vol. 66., No. 12, December 1989 pp 1844-1849.

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