

Spatial and Temporal Concentration of Anionic Surfactant of Water in the Southern Caspian Sea

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Abstract

This study was conducted to determine spatial and temporal concentration of anionic surfactant (Linear Alkylbenzene Sulfonate=LAS) of water in the southern Caspian Sea. Surface water samples were collected from eight transects namely Astara, Anzali, Sefidroud, Tonekabon, Noshahr, Babolsar, Amirabad, and Torkman in the southern Caspian Sea during four seasons (May, August, November and March) in 2010 - 2011. Three stations were selected at 10, 50 and 100 meter depths in each transect. LAS level was measured using Sublation - methylene blue method. Results showed that annual mean of LAS concentration, with the standard error was 0.210 (± 0.012) mg/l. Maximum and minimum LAS concentration were observed 0.165 (± 0.010) and 0.226 (± 0.031) mg/l at Astara and Tonekabon transects, respectively. Mean of LAS increased from spring (0.153(± 0.014) mg/l) to winter (0.294(± 0.036) mg/l) ($P < 0.05$). According to the Spearman correlation test, the water temperature has a negative linear relationship with LAS ($P < 0.05$), and this result was consistent with the increasing concentration of LAS in the winter. In addition, LAS concentration was increased compared to previous studies (2000, 2008 and 2009).

Keywords: *Surfactant, Water, Southern Caspian Sea, Iran.*
