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Ethyl tert-Butyl Ether and Methyl tert-Butyl Ether: Status, Review, and Alternative Use Exploring the Environmental Issues of Mobile, Recalcitrant

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Ethyl tert-Butyl Ether and Methyl tert-Butyl Ether: Status, Review, and Alternative Use

Exploring the Environmental Issues of Mobile, Recalcitrant Compounds in Gasoline

Hossein Noureddini

Petroleum products leaking from under ground storage tanks have raised concerns regarding the quality of ground water resources, The concerns about the environmental behavior and rate of MTBE as an oxygenated additive prompted this iuvestigation to explore the technical characteristics of MTBE in comparison to ETBF. Evaluation of the existing literature suggests that ETBE has more favorable characteristics than MTBE. Findings in this research suggest that ETBE is a technically sound oxygenated octane enhancer, which can help refiners meet specificatios for cleaner burning gasoline.

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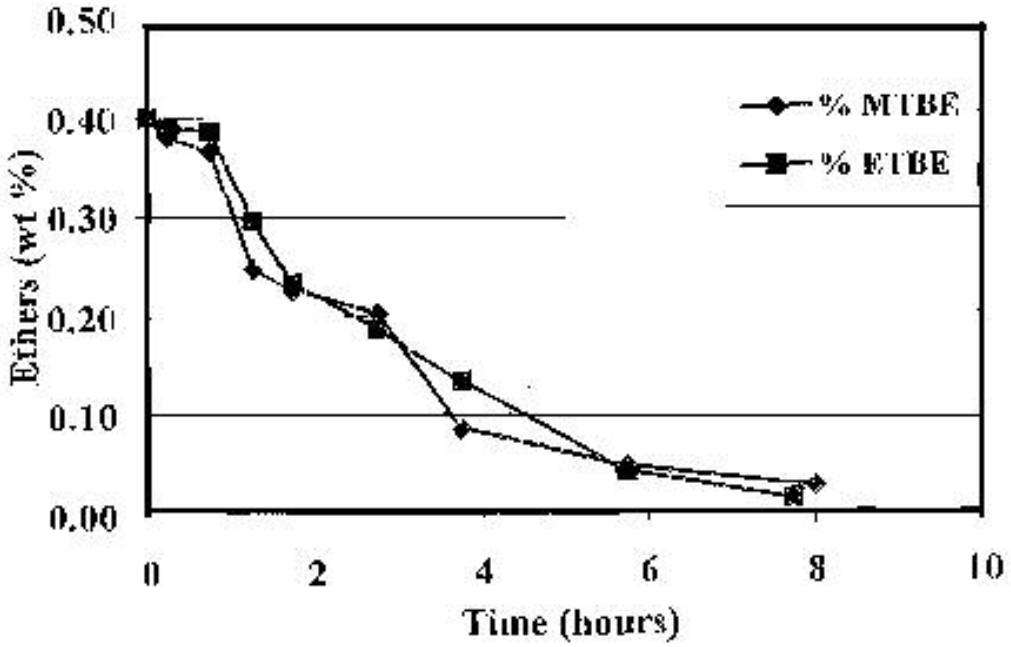

Figure 1. Rate of dispersion of MTBE and ETBE from water in a trough setting subject to an intial ether concentration of 0.4wt%

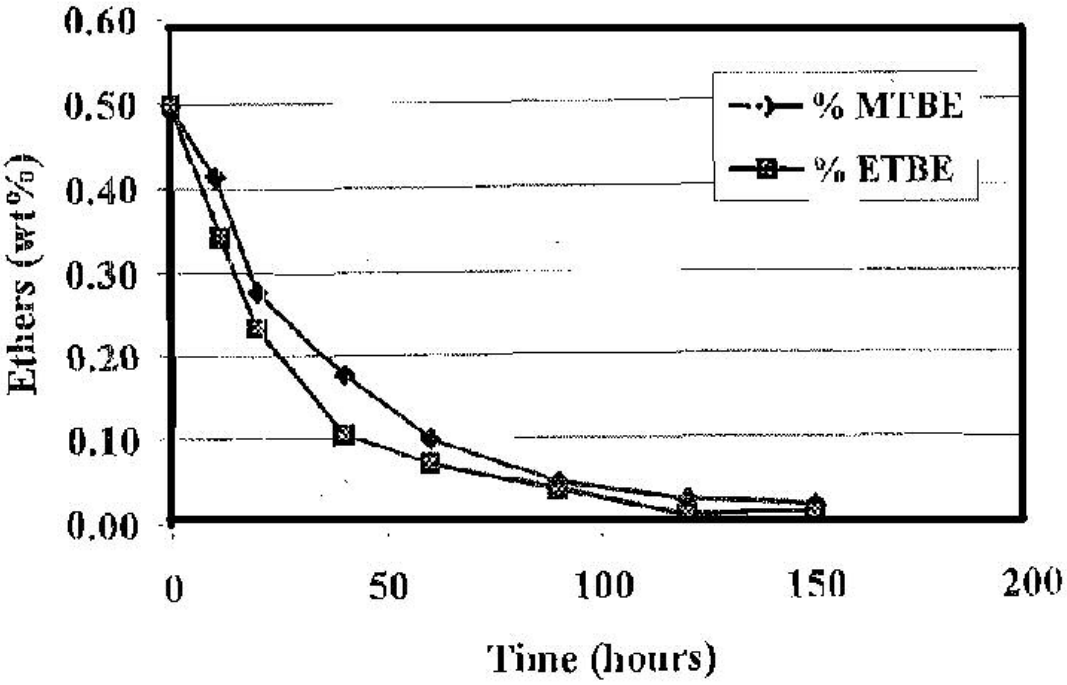

Figure 2. RAte of dispersionnof MTBE and ETBE from water in a ver high-stirred tank subject to an intial ether concentration of 0.50 wt%.

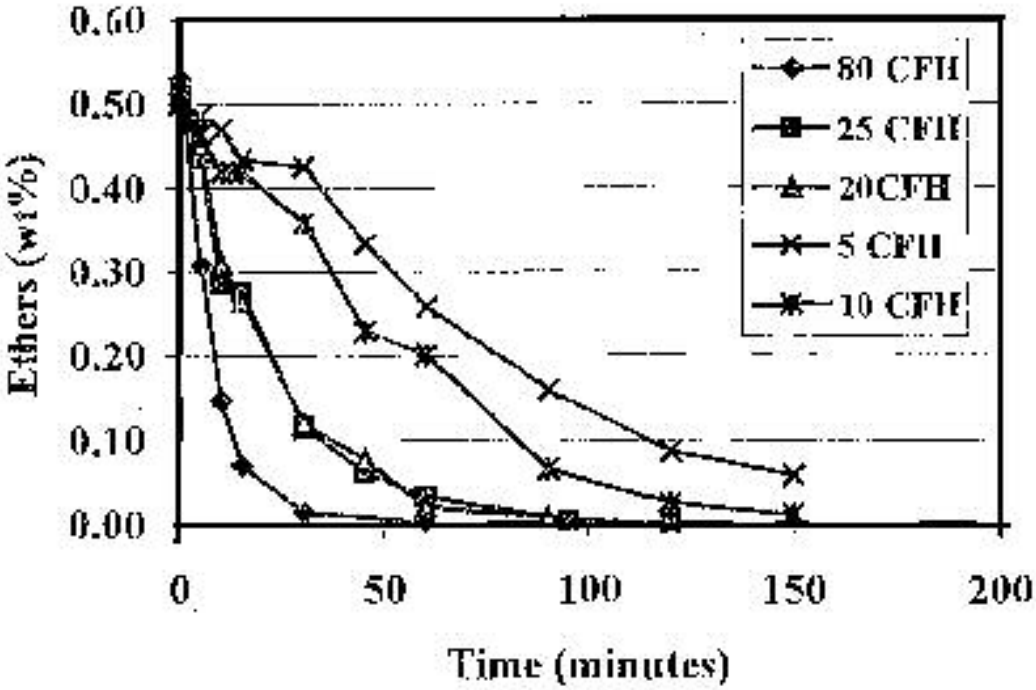

Figure 3. Rate of stripping of MTBE from waer in a packed column subject to an airflow rate 5,10, 20, 25 and 80 CFH

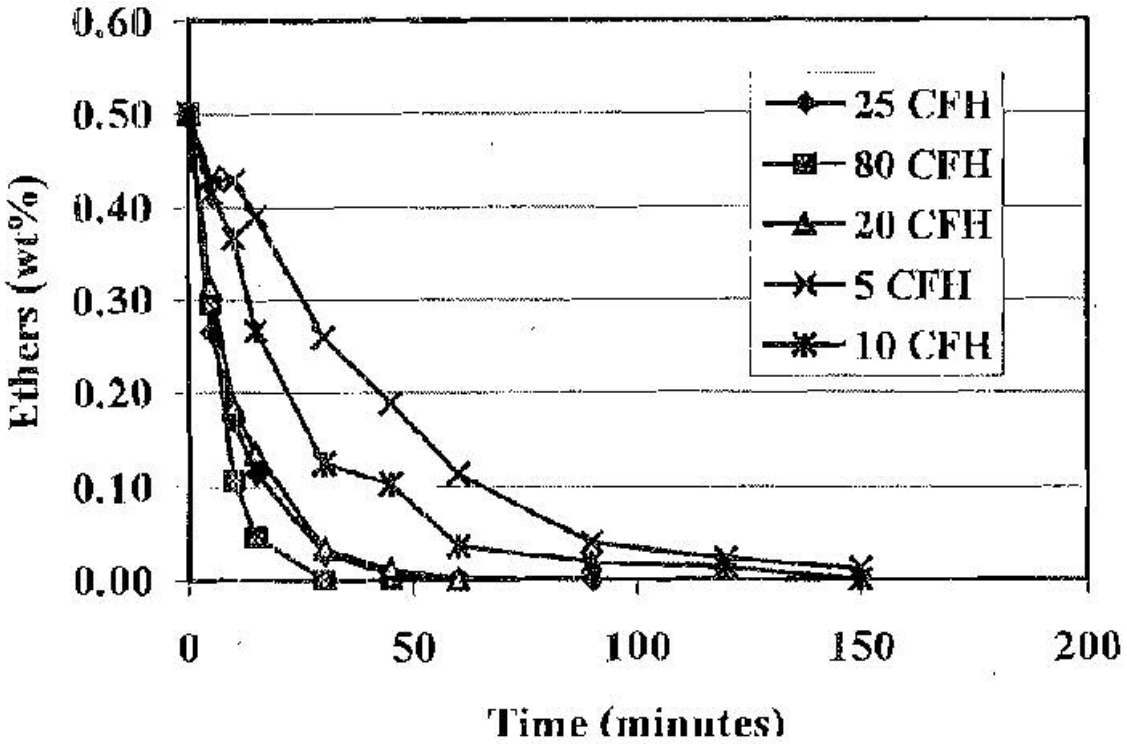

Figure 4. Rte of stripping of ETBE from water in a packed column subject to an airflow rate of 5, 10, 20, 25 and 80 CFH

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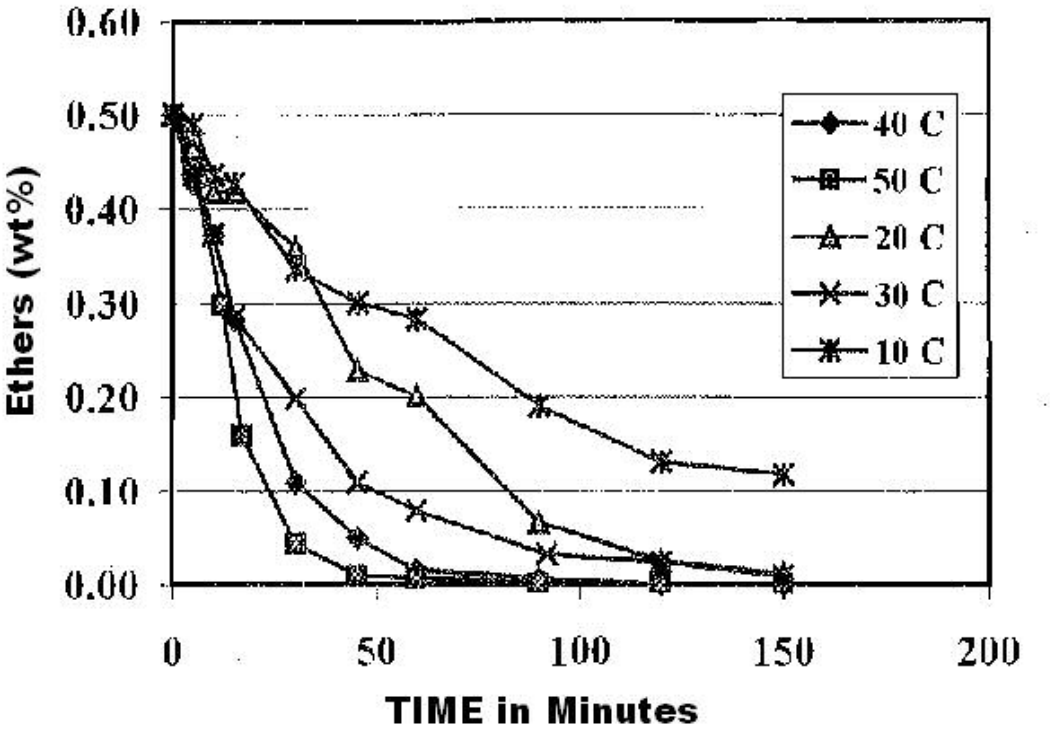

Figure 5. RAte of stripping of MTBE from water in a packed column subject to an airflow rate of 10 CFH and 10,20,30, and 50 C

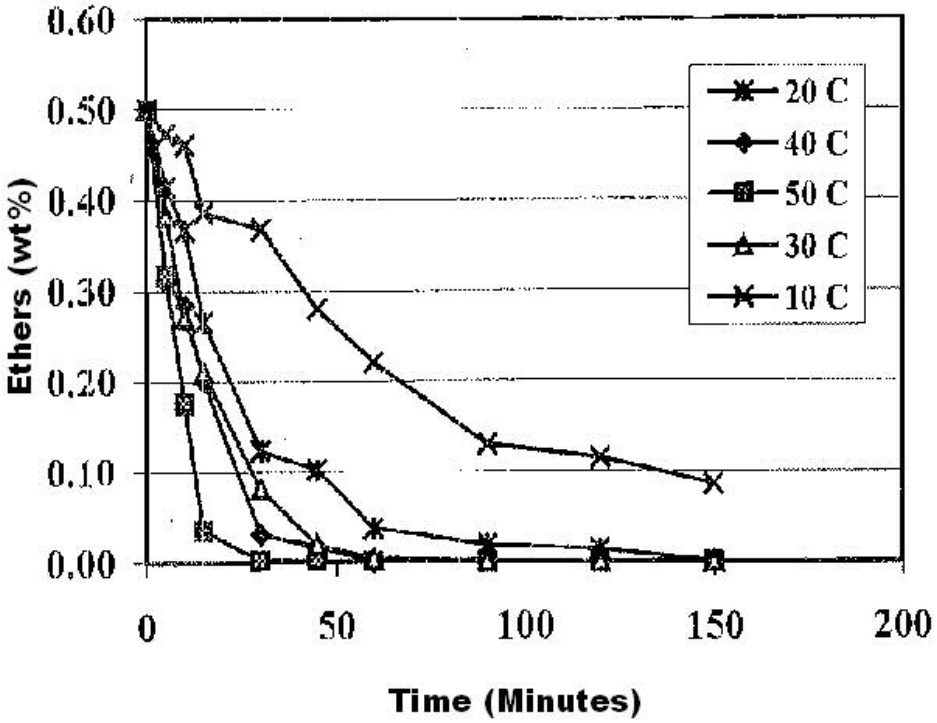

Figure 6. Rate of Stripping of ETBE from water in a packed column subject to an air flow rate of 10 CFH at 10, 20, 30, 40 and 50 C

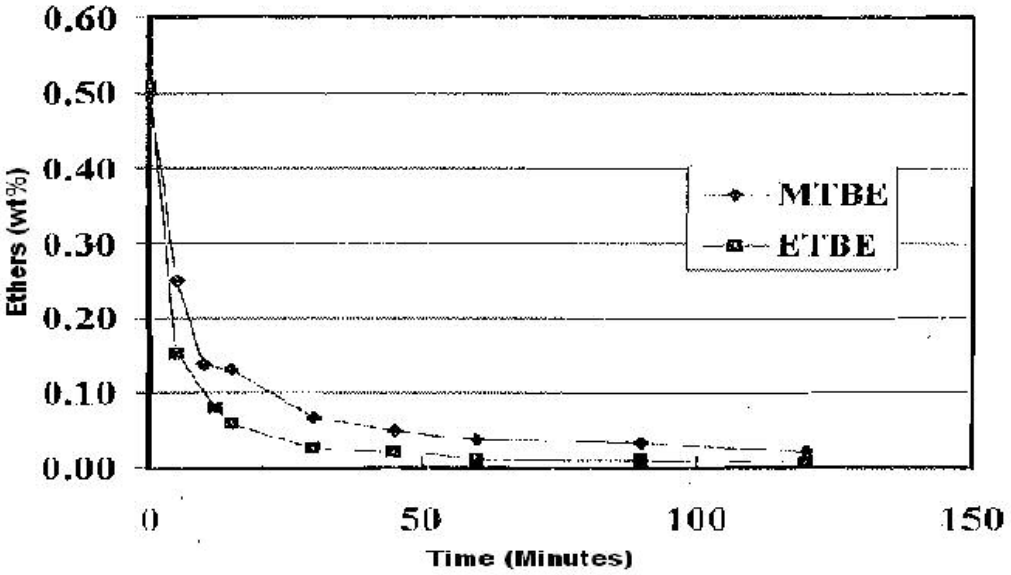

Figure 7. Rate of absorption of MTBE and ETBE on activated carbon subject to an intial ether concentration of 0.05 wt%