

Method Abstract #117

Sulfate in Ethanol by Potentiometric Titration

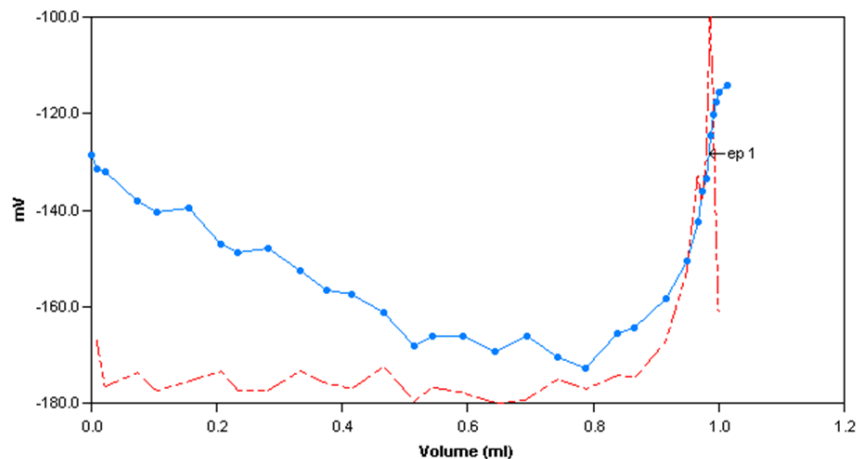
Scope and Application

This method conforms to ASTM D 7318. This method allows for the potentiometric determination of an endpoint in the direct titration of sulfate with 0.00035 N lead perchlorate, $Pb(ClO_4)_2(aq)$.

Method Summary

Sulfate, SO_4^{2-} , is an inorganic salt ion and is the main contaminant in fuel ethanol as the precipitating salts can cause injector deposits, as well as failure in the fuel line in automobiles. Oxygenated fuels can produce corrosion in-vehicle components in contact with the fuel and even at a low contaminate level, sulfate can enhance this corrosion process, decreasing the lifespan of the metal parts in the fuel system.

Sample Titration Curve



Method Performance

Parameter	Specification
Measuring Range*	0.3-10ppm
MDL**	0.3ppm
RSD @ 0.3ppm	7.83% or +/- 0.02ppm
RSD @ 1ppm	3.95% or +/- 0.04ppm
RSD @ 10ppm	1.05% or +/- 0.11ppm