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Triton Analytics Corp.

Reference Laboratories

- Hydrocarbon
 - Chemical
 - Environmental
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Certificate of Analysis:

Dated: 1.7.2014

Request TAC8394

Sample: OXIFREE TM 198

Analysis Description: Chlorine content by Combustion Ion Chromatography

Testing conducted using a modified version of ASTM D7359.

Results:

Total chloride 18 ppm

Total fluoride <0.5 ppm

The Fluoride level is extremely low at .5ppm and the Chloride level at 18ppm is over 20x less than the recommended level of chloride in drinking water.

ASTM D7359 Standard Test Method for Total Fluorine, Chlorine and Sulfur in Aromatic Hydrocarbons and Their Mixtures by Oxidative Pyrohydrolytic Combustion followed by Ion Chromatography Detection (Combustion Ion Chromatography-CIC)

Summary of Test Method:

A sample of known weight or volume is placed into a sample boat and introduced at a controlled rate into a high temperature combustion tube. There the sample is combusted in an oxygen rich pyrohydrolytic environment. The gaseous by-products of the combusted sample are trapped in an absorption medium where the hydrogen halides (HX) formed during combustion disassociate into their respective ions, X⁻. An aliquot of known volume of the adsorbing solution is then automatically injected into an ion chromatograph (IC) by means of a sample injection valve. The halide anions are separated into individual elution bands on the separator column of the IC. The conductivity of the eluent is reduced with an anion suppression device prior to the ion chromatograph's thermal conductivity detector, where the anions of interest are measured. Quantification of the fluorine, and chlorine in the original combusted sample is achieved by first calibrating the system with a series of standards containing known amounts of fluorine, and chlorine and then analyzing unknown samples under the same conditions as the standards.

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