

#### CONDITIONS

Eluent: 1 mM Octanesulfonic Acid Pump: 590 Solvent Delivery Module Injector: 710B WISP Column: Ion Exclusion (30 cm x 7.8 mm) Data: 840 Data System Flow rate: 1.0 ml/min Injection: 100 μl of Working Standard

Detection: 430 Conductivity Range: 500 μS Temperature: On Polarity: + Background: 320 μS



# **ELUENT PREPARATION**

## 10 mM Octanesulfonic Acid Concentrate

Place 2.163g of the sodium salt of octanesulfonic acid (98% Aldrich) in a 250 ml beaker and dissolve in 100 ml Milli-Q water. Add 100 ml of precleaned cation exchange resin in the H<sup>+</sup> form (BioRad AG 50W-X12, 200-400 mesh, or equivalent) and stir the resulting slurry for 10 minutes. Filter the resin, rinsing with approximately 800 ml of Milli-Q water, into a one liter volumetric flask and dilute up to the mark with Milli-Q water. This 10 mM octanesulfonic acid solution is stable for at least one month.

<u>1 mM Octanesulfonic Acid Eluent</u> (pH 3)

Into a one liter volumetric flask add:

100 ml of the octanesulfonic acid concentrate

Fill the flask to the mark with Milli-Q water and mix thoroughly. Filter and degas through a 0.45  $\mu m$  Millipore HA filter.

## STANDARD PREPARATION

Prepare 1000 ppm stock standards from their sodium salts. For the working standard, dilute

0.1 ml of 1000 ppm Fluoride 0.5 ml of 1000 ppm Formate 1.0 ml of 1000 ppm Acetate 1.0 ml of 1000 ppm Propionate 1.0 ml of 1000 ppm Butyrate

to 100 ml with Milli-Q water. This working standard should be prepared weekly, as the formate concentration decreases with time.

### SAMPLE PREPARATION

If the sample contains neutral organics, pass the sample through a preconditioned  $C_{18}$  Sep-Pak. Filter through a Millex 0.45  $\mu$ m HA filter to remove particulates.

# DETECTION LIMITS:

3 x Baseline Noise (100 µl)

Fluoride 5 Formate 15 Acetate 150	<u>Analyte</u>	<u>PPB</u>
Propionate 400 Butvrate 500	Fluoride Formate Acetate Propionate Butvrate	5 15 150 400 500

#### COMMENTS:

- 1. The H<sup>+</sup> ion from the acid influences the separation, the acid's counter-anion has 'no effect, except to alter the background conductivity. Thus, other strong acids
- can be substituted for octanesulfonic acid; the acid Normality should be kept the same. Weak organic acids can also be detected by direct UV absorption in the 205 nm to 215 nm range.
- 2. For specific sample preparation methods, see Section 1.
- 3. UV methods are available for many larger organic acids which do not exhibit a strong response with conductivity detection. See example chromatograms below.



