



**Norquay Technology Inc. USA**

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## **Alkyl Sulfonates**

**History:** Norquay's manufacture of High Purity alkyl sulfonates dates to 1987 with the supply of Catalog houses and select large volume end users. Packaging from 1-20 kg per drum is available to meet customer requirements for repackaging or internal consumption. Norquay also offer *Industrial Grade materials* sold as Customer specific *Water solutions* or *Slurry Suspensions*. Volumes of Industrial grade are in Drums or BULK Tote systems.

### **Applications:**

**I. Analytical:** The 1-alkyl sulfonates are used as counter ions in ion pairs in reverse phase liquid chromatography and in reverse phase thin layer chromatography. The 1-butane to 1-dodecane have been used in separation and quantitative determination of amino acids and peptides, of nucleosides, of vitamin B4 compounds, of forensic drugs and of neuropeptides and various other pharmaceutical products.

*The best resolution and determination of a compound requires a different chain length of the 1-alkyl sulfonate depending upon compound environment. For example, 3-methylhistidine is best resolved by elution with 1-hexane in urine, 1-heptane in plasma, 1-octane in amniotic fluid but with 1-nonane in muscle.*

**II. Biological:** 1-alkyl sulfonates interact specifically with biologicals, especially proteins, by virtue of electrostatic interaction along the polar chain or because of their stereochemistry in solution. The low alkyl chain sulfonic acids are strongly acidic. The acid strength decreases with the increase of the alkyl chain length.

**III. Industrial:** 1-alkyl sulfonates control change in anti-static applications or as emulsifying agents in polymer synthesis, paint undercoats, adhesives, plasticizers and combustion fuel additives.

**PROCESS AID: Emulsification Control:** Key parameter to control the solubility of material is controlled by the length of the carbon back bone to vary the solubility properties of the phase separation and subsequent solubility of the surfactant the polar phase.

**Sodium FREE Form and related Products:** Alkyl sulfonates can be isolated as "sodium free" (i.e alkyl sulfonic acid) products or converted to other products such as **Lithium, Sodium, Potassium, Cesium and Magnesium** alkyl sulfonate.

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## **HPLC Grade**

### **1-Alkyl Sulfonic Acid Sodium Salts-Hydrates**

| <b><u>Name</u></b>                              | <b><u>CAS#</u></b> | <b><u>Formula</u></b>   |
|---|--------------------|---|
| 1-butane sulfonic acid sodium salt              | [2386-54-1]        | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>3</sub> SO <sub>3</sub> Na                  |
| 1-pentane sulfonic acid sodium salt monohydrate | [22767-49-3]       | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> SO <sub>3</sub> Na.H <sub>2</sub> O |
| 1-hexane sulfonic acid sodium salt monohydrate  | [2832-45-3]        | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>5</sub> SO <sub>3</sub> Na.H <sub>2</sub> O |
| 1-heptane sulfonic acid sodium salt monohydrate | [22767-50-6]       | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>6</sub> SO <sub>3</sub> Na.H <sub>2</sub> O |
| 1-octane sulfonic acid sodium salt monohydrate  | [5324-85-5]        | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>7</sub> SO <sub>3</sub> Na                  |
| 1-decane sulfonic acid sodium salt              | [13419-61-9]       | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>9</sub> SO <sub>3</sub> Na                  |
| 1-dodecane sulfonic acid sodium salt            | [2836-53-0]        | CH <sub>3</sub> (CH <sub>2</sub> ) <sub>11</sub> SO <sub>3</sub> Na                 |

**HPLC Specifications:** *HIGH Purity Alkyl Sulfonates for diagnostic applications*

|                     |                                |                   |
|---------------------|--------------------------------|-------------------|
| Appearance:         | White crystalline solid        |                   |
| Solubility:         | 10% solution in water is clear |                   |
| Optical Absorbance: | <i>Wavelength</i>              | <i>Absorbance</i> |
|                     | 210 nm                         | <1.00             |
|                     | 220 nm                         | <0.10             |
|                     | 254 nm                         | <0.04             |
|                     | 280 nm                         | <0.04             |

***We invite your inquiries for other sulfonic acid salts.***

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