

# Determination of Impurity Ion in Lithium Salts by Ion Chromatography



## **Application Industry**

Lithium battery, electric vehicle

## **Key Words**

Lithium battery, Electrolyte, Lithium oxalyldifluoro Borate, Tetrafluoroethylene oxalic acid phosphate lithium, Chloride, Sulfate

## **Introduction**

Some kinds of lithium salt are the key component of electrolyte. The purity can effect the performance of battery. Chloride and Sulfate are especially concerned.

## **Samples**

Lithium oxalyldifluoro borate

Tetrafluoroethylene oxalic acid phosphate lithium

## **Equipment and Instruments**

CIC-D120 Ion Chromatograph, includes :

- High pressure pump
- Six-way valve
- Anion self regenerate supsressor
- Conductivity detector
- SH-AC-4 column

## **Chemicals**

Sulfate standard sample 1000ppm

Chloride standard sample 1000ppm

## **Sample Pretreatment**

A mount of sample is dissolved in water , diluted to proper concentration, and then filtered by 0.22  $\mu$  m of filter membrane , then injected into the Instrument.

## **Instrument Parameters**

Eluent  $\text{Na}_2\text{CO}_3 + \text{NaHCO}_3$

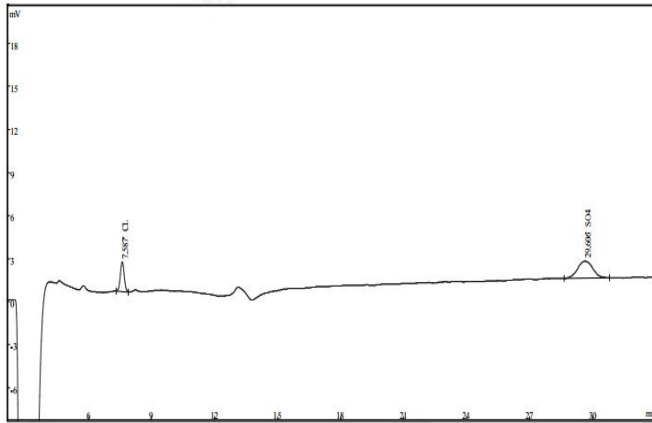


Flow rate 1.0 mL/min

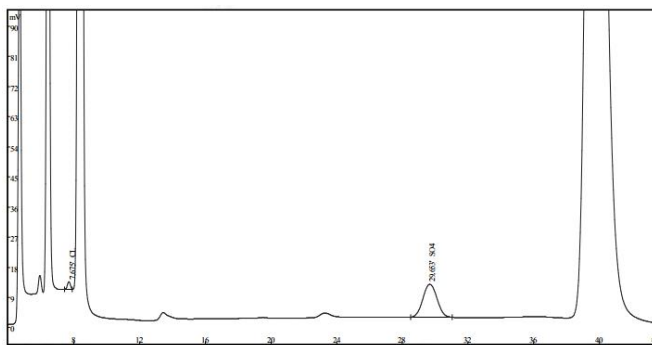
Temperature 35°C

Injection volume 25  $\mu$ L

### *Spectrum*



Standard spectrum



Sample spectrum

### *Conclusion*

The peak of chloride and sulfate are clear, which can be confirmed and calculate to a nicety.

