# DETERMINATION OF POTASSIUM IN FRUIT JUICES

This is a method for the determination of potassium levels in fruit juices such as blackcurrant, orange, lemon, grape, etc. This method is also suitable for the determination of potassium in wine.

## Equipment Required

1. EDT directIION Dr359TX Ion Meter or pH meter with millivolt scale
2. EDT directION PotassiumCombination ion selective electrode (3031)

## Reagents

1. Potassium chloride (analar)
2. Sodium chloride (analar)
3. 1.0 Molar TEACL ISAB solution
4. Distilled/deionised water

## Standards Preparation

1. Potassium stock/standard solution 1000 mg/l. Dissolve 1.910g KCl (analar) in distilled water in a volumetric flask and dilute to 1000 mls.

2. Prepare 100 ml of 100 mg/l, 10 mg/l and 1 mg/l standards from the stock solution by serial dilution.

## Sample Preparation

Pipette 5 ml of fruit juice into a 50 ml volumetric flask. Dilute to the mark with distilled water.

## Ionic Strength Adjuster Preparation

1. Prepare 1 Molar TEACL solution in distilled water.

2. Add 1.0 ml of ISAB to each 50 ml of sample or standard to keep a constant background strength.

## Method

Take 50 ml of 1 mg/l $K^+$ standard and add 1 ml of ISA.

Immerse electrode tip and measure the electrode potential (mV). Read the remaining standards in increasing concentrations in the same way, making sure to rinse electrodes before a different solution is measured. Construct a standard curve of mV vs concentration on semi-log paper.

Measure 50 mls of sample dilution with 1.0 ml ISA in the same manner as the standards.

Note : Using an EDT Ion Meter allows the user to calibrate and read in direct concentration units without the need for manual plotting or interpolation

## Calculation

Interpolate from the graph the concentration of $K^+$ present in the sample using its mV reading. This value should then be multiplied by 10 due to the dilution factor. The result is expressed in mg/l.