



# CONCEPT LIFE SCIENCES

## CONCEPT LIFE SCIENCES METHOD STATEMENT CHROMIUM VI

### INTRODUCTION

*This method is not UKAS accredited*

The analytical procedure described herein outlines the determination of Chromium VI in soils, waters and PVC filters by colorimetric methods.

### PRINCIPLE

Soil samples are leached at a water:soil ratio of 2:1. The aqueous extracts or water samples are then analysed after addition of nitric acid and 1,5-diphenylcarbazide by determination of absorbance at 540 nm spectrophotometrically.

Filter samples are extracted with base solution and heated in an oven at 100 °C for 1 hour. The extract is filtered and washed with hot water. Nitric acid and diphenyl carbazide in acetone are added to the extract and the made to final volume with water. The extracts are then analysed spectrophotometrically.

### PERFORMANCE CHARACTERISTICS

#### SUBSTANCES DETERMINED

Hexavalent Chromium (Chrom VI).

#### RANGE OF APPLICATION

- Soil samples 1 to 10 mg / kg
- Water sample 0.01 to 1 mg / l
- Filter samples 0.1 to 10 ug

#### LIMIT OF DETECTION

- Soil samples 1 mg / kg
- Water sample 0.01 mg / l
- Filter samples 0.1 ug

#### ANALYTICAL QUALITY CONTROL

Analytical quality control is maintained by a number of measures:

- Analysis of control samples within each analytical batch, such as independent standards, matrix spikes or reference materials
- Analysis of reagent/method blanks within each analytical batch
- Participation in external proficiency testing and inter-laboratory schemes such as LGC Standards CONTEST



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## **REFERENCES**

Methods for the Examination of Waters and Associated Materials, "Chromium in Raw and Potable Waters and Sewage Effluents 1980".

NIOSH Method 7600 Issue 2 Chromium, Hexavalent, NIOSH Manual of Analytical Methods (NMAM), Fourth Edition, 8/15/94