

## TECHNICAL REPORT

### ACIRS-S1B-2011

#### Reference Material for Sulfur in Coal

Date of Certification: July, 2011  
Valid to: July, 2018  
Report Number: AD-S1B-2011 rev. 1

## 1. Introduction

This report describes the preparation and analysis of ACIRS-S1B-2011, comprising a sealed jar containing an approximate mass of 250 g and nominal top size of 212  $\mu\text{m}$ .

This sample is intended to be used in association with the determination of sulfur in coal. It may be used to support the validity of measurements conducted at similar concentrations to this reference material, as a quality control tool and for calibration purposes.

## 2. Certified Values

Table1 Certified values

| ACIRS-S1B-2011 | Units        | Total Sulfur | Standard Deviation |
|----------------|--------------|--------------|--------------------|
|                | %, dry basis | 0.71         | 0.020              |

## 3. Instructions for Use

This reference material does not require further preparation prior to analysis but must be thoroughly mixed by end-over-end rotation before sub-sampling.

Sample bottles should be kept tightly sealed and stored in a cool, dark place.

Samples shall be handled in accordance with the Safety Data Sheet available from [www.acps.com.au/acirs](http://www.acps.com.au/acirs)

## 4. Sample Source and Preparation

Approximately 100 kg of a Queensland, Northern Bowen Basin coal was obtained at -50 mm top size. The material was air-dried and crushed to a nominal top size of 4 mm, before being milled to 212  $\mu\text{m}$  nominal top size. Rotary sample division was used for each stage of this process. Samples were packaged into plastic bags in plastic jars each containing approximately 250g.

## 5. Homogeneity testing

11% of jars were randomly selected and content tested for homogeneity by determining dry total sulfur content of each. Batch homogeneity was confirmed.

## 6. Certification

Certification of ACIRS-S1B-2011 was through a sub-contracted proficiency test program and involved 17 laboratories accredited to ISO 17025.

All analyses were conducted in accordance with AS 1038.3 (for moisture) and the AS 1038.6.3 series of methods (for sulfur). The outcome of statistical processing of proficiency test data is given in Table 2.

Table 2 Statistical analysis of results

| Laboratory         | Total Sulfur<br>%, d | Laboratory | Total Sulfur<br>%, d |
|--------------------|----------------------|------------|----------------------|
| 1                  | 0.73                 | 10         | 0.70                 |
| 2                  | 0.73                 | 11         | 0.73                 |
| 3                  | 0.68                 | 12         | 0.72                 |
| 4                  | 0.71                 | 13         | 0.72                 |
| 5                  | 0.71                 | 14         | 0.70                 |
| 6                  | 0.68                 | 15         | 0.72                 |
| 7                  | 0.68                 | 16         | 0.67                 |
| 8                  | 0.73                 | 17         | 0.69                 |
| 9                  | 0.72                 |            |                      |
| Minimum            |                      | 0.67       |                      |
| Maximum            |                      | 0.73       |                      |
| Mean               |                      | 0.71       |                      |
| Standard Deviation |                      | 0.020      |                      |

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