

# Certificated Reference Materials For Expansion Coefficient

[www.lab-ware.co.uk](http://www.lab-ware.co.uk)



Ruston Services is able to provide high purity aluminium test pieces for thermal analysis expansion work. While this is not a traceable reference material, the high purity of the aluminium pieces ensures that the accuracy of the expansion measurements is high enough for most applications.

Two types of aluminium test piece can be supplied

## **Aluminium Cylinder**

Supplied at approximately 10mm length and 5mm diameter.

Other reference material lengths may be supplied if required

## **Aluminium Strip**

Supplied at approximately 20mm length ( $\pm 0.5\text{mm}$ ), 1mm thickness, and 4mm width.

Other reference material lengths may be supplied if required

It is usual for an accurate length of the reference material to be determined prior to testing using the analyser in which the testing is to be carried out.

Each reference piece is supplied with a certificate of purity from the material manufacturer. The material supplied has a purity of 99.999%. It is suitable for analysis when working to ASTM E831 and ISO 11359-2.

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The expected aluminium expansion for different temperature ranges are as follows

Range	T <sub>exp</sub>
20°C - 100°C	23.86 x 10 <sup>-6</sup> /°C
20°C - 200°C	24.58 x 10 <sup>-6</sup> /°C
20°C - 300°C	25.45 x 10 <sup>-6</sup> /°C
20°C - 400°C	26.49 x 10 <sup>-6</sup> /°C
20°C - 500°C	27.68 x 10 <sup>-6</sup> /°C

Source: The Aluminium Data Book, Reynolds Metal Co. Ltd

Note that the most common source of error in expansion measurements is the accuracy of the temperature calibration in the analyser.

## Pricing

One test piece is priced at £100. Price excludes shipping and UK VAT where applicable

## Specifications—Rod Samples

Purity	99.999%
Length	10mm ± 0.5mm – Other lengths can be supplied on request
Diameter	5mm

## Specifications—Strip Samples

Purity	99.999%
Length	20mm ± 0.5mm - Other sizes can be supplied on request
Width	4mm
Thickness	1mm

## Ordering Information

Quotation Requests	Please email your requirements to <a href="mailto:sales@rustons.org.uk">sales@rustons.org.uk</a> , stating which reference you would like to purchase. Quotations are normally valid for 60 days.
Ordering	Please send your official order number to the address below or by email to <a href="mailto:sales@rustons.org.uk">sales@rustons.org.uk</a> . RSL Rental terms apply and are available on request. If your organisation is VAT registered, please ensure that your VAT number is clearly visible on your order.
Delivery	Delivery is normally 4 - 6 weeks from receipt of order. We may be able to provide faster delivery in some circumstances