


## CERTIFICATE OF CALIBRATION

Issue:- Certificate Number: 97781  
97781\_10 Date of Issue: 05-Dec-24  
Approved Signatory: Mark Norfolk  
Page 1 of 2 Signed: 



### Submitter:-

Mecmesin Limited  
Newton House  
Spring Copse Business Park  
Slinfold  
West Sussex  
RH13 0SZ

### Issued by:-

Kent Scientific Services  
8 Abbey Wood Road  
Kings Hill  
West Malling  
Kent  
ME19 4YT  
Tel: 03000 415 100  
Fax: 01732 220006

---

**EQUIPMENT:** Weights  
**SERIAL NUMBER:** S501 - S527 Weigh set S5  
**MAKE/TYPE:** N/A  
**STANDARDS USED:** Local Standard Set 16521  
**DATE RECEIVED:** 19 November 2024  
**DATE CALIBRATED:** 4 December 2024  
**DETAILS:** 27 Stainless Steel

---

### MEASUREMENTS:

Kent Scientific Services method used: CAL SMALL, Calibration of Small Masses.

The calibrations took place in a controlled environment with the temperature held between 18°C and 22°C, and with the relative humidity held between 40% and 60%.

The measurement results obtained in the table, where each measured value given represents not the true mass, but the mass of a hypothetical weight of density 8,000 kg.m<sup>-3</sup>, which in air of density 1.2 kg.m<sup>-3</sup> would balance the corresponding weight identified in the first column at 20°C.

The method of weighing was by substitution (Borda's method). In each instance the standard weight used had been calibrated by UKAS Calibration Laboratory number 0474, 0260 or 0352 within the previous three years. The uncertainty of measurements for each of the different denominations is listed in the last column of the table. Duplicate weights, where present, are indicated by a dot or dots.

Customer supplied information is notated with a ~, and results relate only to the item(s) calibrated.

Unless otherwise notated, samples are tested in as received condition at Kent Scientific Services.

---

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

**TABLE OF MEASUREMENT RESULTS**

| <u>Identity Mark</u> | <u>Nominal Mass</u> | <u>Measured Value</u> | <u>Error from Nominal</u> | <u>Estimated Uncertainty</u> |
|----------------------|---------------------|-----------------------|---------------------------|------------------------------|
| S501                 | 5N                  | 509.602 3 g           | - 5.8 mg                  | ± 1.6 mg                     |
| S502                 | 5N                  | 509.610 0 g           | + 1.8 mg                  | ± 1.6 mg                     |
| S503                 | 10N                 | 1019.203 2 g          | - 13.1 mg                 | ± 3.1 mg                     |
| S504                 | 10N                 | 1019.203 6 g          | - 12.7 mg                 | ± 3.1 mg                     |
| S505                 | 10N                 | 1019.204 8 g          | - 11.5 mg                 | ± 3.1 mg                     |
| S506                 | 10N                 | 1019.204 9 g          | - 11.4 mg                 | ± 3.1 mg                     |
| S507                 | 10N                 | 1019.204 6 g          | - 11.7 mg                 | ± 3.1 mg                     |
| S508                 | 10N                 | 1019.179 8 g          | - 36.5 mg                 | ± 3.1 mg                     |
| S509                 | 10N                 | 1019.189 7 g          | - 26.6 mg                 | ± 3.1 mg                     |
| S510                 | 10N                 | 1019.189 7 g          | - 26.6 mg                 | ± 3.1 mg                     |
| S511                 | 10N                 | 1019.205 4 g          | - 10.9 mg                 | ± 3.1 mg                     |
| S512                 | 10N                 | 1019.205 8 g          | - 10.5 mg                 | ± 3.1 mg                     |
| S513                 | 10N                 | 1019.199 9 g          | - 16.4 mg                 | ± 3.1 mg                     |
| S514                 | 10N                 | 1019.209 3 g          | - 7.0 mg                  | ± 3.1 mg                     |
| S515                 | 10N                 | 1019.208 6 g          | - 7.7 mg                  | ± 3.1 mg                     |
| S516                 | 10N                 | 1019.203 0 g          | - 13.3 mg                 | ± 3.1 mg                     |
| S517                 | 10N                 | 1019.204 0 g          | - 12.3 mg                 | ± 3.1 mg                     |
| S518                 | 10N                 | 1019.202 8 g          | - 13.5 mg                 | ± 3.1 mg                     |
| S519                 | 10N                 | 1019.203 3 g          | - 13.0 mg                 | ± 3.1 mg                     |
| S520                 | 10N                 | 1019.207 4 g          | - 8.9 mg                  | ± 3.1 mg                     |
| S521                 | 10N                 | 1019.19 27 g          | - 23.6 mg                 | ± 3.1 mg                     |
| S522                 | 50N                 | 5096.127 g            | + 45 mg                   | ± 16 mg                      |
| S523                 | 50N                 | 5096.112 g            | + 30 mg                   | ± 16 mg                      |
| S524                 | 50N                 | 5096.090 g            | + 9 mg                    | ± 16 mg                      |
| S525                 | 50N                 | 5096.063 g            | - 19 mg                   | ± 16 mg                      |
| S526                 | 50N                 | 5096.114 g            | + 33 mg                   | ± 16 mg                      |
| S527                 | 50N                 | 5096.127 g            | + 46 mg                   | ± 16 mg                      |
| S513 *               | 10N                 | 1019.222 7 g          | + 6.4 mg                  | ± 3.1 mg                     |
| S503 *               | 10N                 | 1019.216 2 g          | - 0.1 mg                  | ± 3.1 mg                     |
| S504 *               | 10N                 | 1019.222 2 g          | + 5.9 mg                  | ± 3.1 mg                     |
| S508 *               | 10N                 | 1019.214 4 g          | - 1.9 mg                  | ± 3.1 mg                     |
| S509 *               | 10N                 | 1019.207 5 g          | - 8.8 mg                  | ± 3.1 mg                     |
| S510 *               | 10N                 | 1019.214 8 g          | - 1.5 mg                  | ± 3.1 mg                     |
| S516 *               | 10N                 | 1019.222 0 g          | + 5.7 mg                  | ± 3.1 mg                     |
| S518 *               | 10N                 | 1019.220 8 g          | + 4.5 mg                  | ± 3.1 mg                     |
| S519 *               | 10N                 | 1019.224 7 g          | + 8.4 mg                  | ± 3.1 mg                     |
| S521 *               | 10N                 | 1019.208 8 g          | - 7.5 mg                  | ± 3.1 mg                     |

\* Denotes post adjustment calibration

The basis for conversion between force units and mass units is that a 1kg mass will experience a force of g newtons where g is the strength of the local gravitational field. At Kent Scientific Services the estimated local  $g = 9.81146 \text{ ms}^{-2}$ .

END OF RESULTS