CERTIFICATE OF CALIBRATION

Issue:- 97429_10 | Certificate Number: **97429** | Date of Issue: **06-Jun-24**

Approved Signatory: **Tom Williams**

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UKAS CALIBRATION 0352

Kent County Council kent.gov.uk

Submitter:-
Mecmesin Limited
Newton House
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Issued by:-
Kent Scientific Services
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Kent
ME19 4YT
Tel: 03000 415 100
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EQUIPMENT:	Weights Set S3
SERIAL NUMBER:	S301 - S327
MAKE/TYPE:	N/A
STANDARDS USED:	Local Standard Set 16521
DATE RECEIVED:	28 May 2024
DATE CALIBRATED:	4 June 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 $kg.m^{-3}$, which in air of density 1.2 $kg.m^{-3}$ 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.

TABLE OF MEASUREMENT RESULTS

Identity Mark	Nominal Mass	Measured Value	Error from Nominal	Estimated Uncertainty
S301	5 N	509.605 2 g	- 2.9 mg	± 1.6 mg
S302	5 N	509.607 8 g	- 0.3 mg	± 1.6 mg
S303	10 N	1019.212 2 g	- 4.1 mg	± 3.1 mg
S304	10 N	1019.188 6 g	- 27.7 mg	± 3.1 mg
S305	10 N	1019.193 8 g	- 22.5 mg	± 3.1 mg
S306	10 N	1019.205 1 g	- 11.2 mg	± 3.1 mg
S307	10 N	1019.141 0 g	- 75.3 mg	± 3.1 mg
S308	10 N	1019.181 0 g	- 35.3 mg	± 3.1 mg
S309	10 N	1019.175 4 g	- 40.9 mg	± 3.1 mg
S310	10 N	1019.202 3 g	- 14.0 mg	± 3.1 mg
S311	10 N	1019.198 3 g	- 18.0 mg	± 3.1 mg
S312	10 N	1019.208 2 g	- 8.1 mg	± 3.1 mg
S313	10 N	1019.208 0 g	- 8.3 mg	± 3.1 mg
S314	10 N	1019.189 9 g	- 26.4 mg	± 3.1 mg
S315	10 N	1019.193 7 g	- 22.6 mg	± 3.1 mg
S316	10 N	1019.183 1 g	- 33.2 mg	± 3.1 mg
S317	10 N	1019.199 7 g	- 16.6 mg	± 3.1 mg
S318	10 N	1019.160 3 g	- 56.0 mg	± 3.1 mg
S319	10 N	1019.202 8 g	- 13.5 mg	± 3.1 mg
S320	10 N	1019.182 0 g	- 34.3 mg	± 3.1 mg
S321	10 N	1019.204 3 g	- 12.0 mg	± 3.1 mg
S322	50 N	5096.013 g	- 69 mg	± 16 mg
S323	50 N	5096.061 g	- 21 mg	± 16 mg
S324	50 N	5096.095 g	+ 13 mg	± 16 mg
S325	50 N	5096.047 g	- 34 mg	± 16 mg
S326	50 N	5096.077 g	- 5 mg	± 16 mg
S327	50 N	5096.057 g	- 24 mg	± 16 mg

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 ms-2.

END OF RESULTS

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2 providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.