Paragon Scientific Ltd

UKAS accredited calibration laboratory No. 0649 accredited to ISO/IEC 17025

UKAS accredited reference material producer No. 4589 accredited to ISO 17034

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CERTIFICATE OF CALIBRATION

ISSUED BY PARAGON SCIENTIFIC LIMITED

Date of Issue: Certificate No. **UD4068R**

Approved Signatory

Name Mr. P. Whitehurst

Technical Director

Signature

ISO 17025 / ISO 17034 DENSITY REFERENCE STANDARD

Product Code: **RDEN15-06** Lot No: **1211106** Expiry Date:

Temperature (°C)	Density (g/mL)
15 °C	0.8660

Density measurements were made in accordance with ASTM D1480, Standard Test Method for Density and Relative Density (Specific Gravity) of Viscous Materials by Bingham Pycnometer, the Bingham Pycnometer being calibrated as per the requirements of ASTM D1480. The value quoted is calculated as density in vacuum. Temperature measurements were made using thermometers specified in ASTM D1480 which have a current calibration traceable to the National Physical Laboratory (NPL), National Institute Standards and Technology (NIST) and other recognised national standards laboratories. The calibrations of this product are traceable to NIST.

The repeatability of the density measurement by ASTM D1480 is ± 0.00005 g/mL.

Relative Density (Specific Gravity)

0.8660	15/4 °C
0.8668	15/15 °C

Relative Density was calculated by dividing the density, as obtained from ASTM D1480, by the density of water at the reference temperature. The density of water was taken from the table denoted "Density of Water" found in ASTM D1480 and conforms to the International Temperature Scale 1990 (ITS 90)

Expanded Uncertainty ± 0.01 %

The reported expanded uncertainty is based on a combined standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

The evaluation has been carried out in accordance with UKAS requirements.

Notes:

The shelf life of this product is guaranteed until the expiry date, provided the bottle is unopened and stored at a temperature of 15 to 30 °C. The guarantee is void if the bottle seal is broken. Filtration of product before use is not necessary. No minimum volume is required to guarantee homogeneity.