

## Certificate of Analysis

### pH Buffer Standard

### DIN Buffer Standard pH 10.012 ± 0.010 @ 25°C

*Product No:* 110012  
*Lot No:* 116213J1  
*Expiry date:* 28/09/2015

*Mean pH value:* 10.008 @25°C  
*Date of measurement:* 26/09/2013

**Specification:**  
10.002 - 10.022 @25°C

#### pH Measurement:

The result reported above was determined by analysis of a sample of this lot taken at time of manufacture. Test Method used was TPPHB. Measured with a combination glass electrode after multiple point calibration with reference materials. It is certified traceable to the following National Institute of Standards and Technology (USA), SRM 191d-I Sodium Bicarbonate, SRM 191d-II Sodium Carbonate, SRM 186-I-g Potassium Dihydrogen Phosphate and SRM 186-II-g Disodium Hydrogen Phosphate. This certificate relates solely to the lot number given above. The uncertainty of measurement has been calculated not to exceed ± 0.010pH at 95% confidence level, i.e. coverage factor k =2.

This test method is in accordance with IUPAC Recommendations 2002 Measurement of pH. Definition, Standards and Procedures.

#### Accreditation:

Reagecon Diagnostics Ltd. is accredited by the Irish National Accreditation Board, under scope 264T, for the test method, TPPHB, used to generate the above result. This accreditation is intended only to certify that Reagecon has the Quality Management Systems in place to ensure that each individual test result generated using TPPHB is technically valid and is supported by appropriate uncertainty measurements.

Products are manufactured under an NSAI registered I.S EN ISO9001:2008 Quality System, registration no: 19.2769

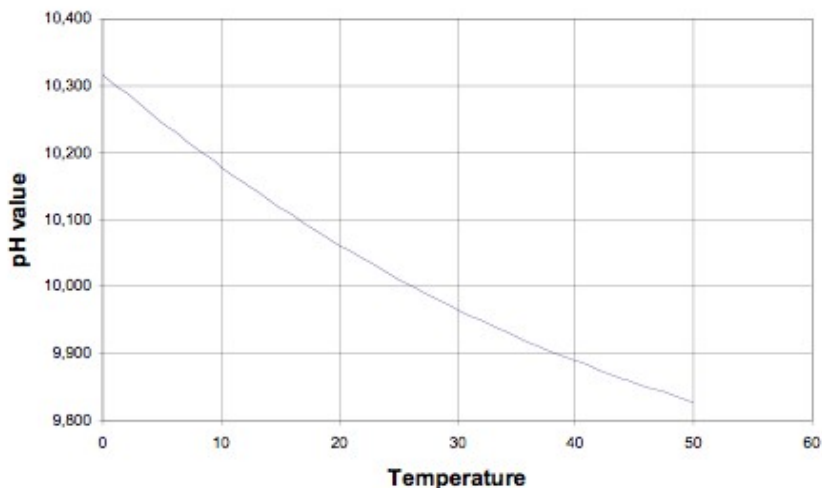
*Date of issue of the certificate:* 26/09/2013

*Derdre Madigan*

**QC Technician Derdre Madigan**

Complementary information relative to this product is available at [www.reagecon.com](http://www.reagecon.com)  
Page 1 of 3. This Certificate must not be reproduced except in full. Rev-13G12

pH 10.012 at 25°C



<u>TEMP. (°C)</u>	<u>pH VALUE</u>	<u>TEMP. (°C)</u>	<u>pH VALUE</u>
0	10,317	33	9,941
1	10,303	34	9,933
2	10,288	35	9,925
3	10,274	36	9,918
4	10,259	37	9,910
5	10,245	38	9,903
6	10,232	39	9,896
7	10,219	40	9,889
8	10,205	41	9,883
9	10,192	42	9,876
10	10,179	43	9,870
11	10,167	44	9,863
12	10,155	45	9,857
13	10,142	46	9,851
14	10,130	47	9,845
15	10,118	48	9,840
16	10,107	49	9,834
17	10,095	50	9,828
18	10,084		
19	10,073		
20	10,062		
21	10,052		
22	10,042		
23	10,032		
24	10,022		
25	10,012		
26	10,002		
27	9,993		
28	9,984		
29	9,975		
30	9,966		
31	9,958		
32	9,950		

## Certificate of Conformity and Traceability

**pH 10.012 ±0.010 (k=2) - 25°C**

### Traceability:

Traceable to NIST pH scale. Certified Reference material from National Institute of Standards & Technology (NIST) - Nominal value pH 10.015 @25°C. The exact value of this standard was determined with an expanded uncertainty of ±0.006pH by NIST using a standard Hydrogen Electrode Apparatus.

### Certified Value:

pH 10.012 ±0.010 (k=2) - 25°C The limits of expanded uncertainty are given to guarantee a confidence level of ~95% (k=2). This uncertainty reflects the combined effects of measurement errors, operator errors and equipment errors.

### Stability:

When stored under Good Laboratory practice the certified value is valid for the extent of the products shelf life whether opened or unopened.

### Measurement:

The certified value was determined by measurements of samples with dedicated electrodes under thermostated conditions using a high resolution meter traceable to primary standards.

### Composition:

Sodium Carbonate 25mmol/l  
Sodium Bicarbonate 25mmol/l  
Added germicide < 0.01%

### Fomulation:

Specified by NIST, IUPAC and DIN19266.

### Preparer:

Reagecon Diagnostics Ltd.

### Intended Use:

Standard pH solution for calibration of pH measurement chains.

### Preparation of standard:

Sodium Carbonate Analar and Sodium Bicarbonate Analar were dissolved and mixed without loss in purified water. Germicide was added. The solution was protected from evaporation and contamination until bottling.

### Storage:

Before use: store in unopened bottle.

After opening: store in capped bottle in normal atmospheric conditions at a temperature between 5°C and 30°C.

### Recommended Use:

First use: Write the opening date on the bottle using an indelible pen or appropriate label.

Use a clean dry beaker for taking an aliquot for calibration and cap bottle as soon as aliquot is taken.

Never pour the used aliquot back into the bottle. Always follow Good Laboratory Practice.

For accurate measurements at a temperature other than 25°C, refer to the table below when calibrating your meter.