Honeywell

CERTIFICATE OF ANALYSIS

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Honeywell Brand:	Honeywell Fluka™
Honeywell Product Number:	242146
Honeywell Lot Number:	H093S

Buffer solution DURACAL pH 9.21 (25°C), certified buffer solution traceable to NIST/PTB reference materials, DKD certified

This is a co-branded product produced for Honeywell Research Chemicals by Hamilton Company. Product labeling will reference both the Honeywell and Hamilton product number and lot numbers.

Hamilton Buffer Lot Number:	1736390
Hamilton Reference Number:	242357
Hamilton Production Lot Number:	1743325
Exp.date (+/-0.02 of act.pH):	2022-02-08

Nominal pH value at 25°C:	9.21 +/- 0.02
Actual pH value at 25°C[1]:	9.20 (Calibration Cert. 10-0307/D-K-15186-01-00/17-03)
Secondary Reference Materials:	NIST SRM 187e
	MERCK 1.01962.0001 CHARGE 131962B

The minimum shelf life is based on the current knowledge and holds only for proper storage conditions in the originally closed flasks/ packages.

We herewith confirm that the delivery is effected according to the technical delivery conditions agreed. Particular properties of the products or the suitability for a particular area of application are not assured. We guarantee a proper quality within our General Conditions of Sales.

Honeywell
Quality Management

This document was produced electronically and is valid without a signature

1) Determined on a representative amount of sample (1L out of 1,000L) at D-K-15186-01-00. The expanded uncertainty of the measurement is 0.02 pH.

Declaration of Quality

Hamilton DuraCal Buffer pH 9.21 (Certified Reference Material)

Product number:	242357
Production lot number:	1743325
Nominal pH value at 25°C:	9.21 +/- 0.02 EXP. 2022-02-08
Actual pH value at 25°C[1]:	9.20 (Calibration Cert. 10-0307/D-K-15186-01-00/17-03)
Secondary Reference Materials:	NIST SRM 187e MERCK 1.01962.0001 CHARGE 131962B
Buffer lot number:	1736390

Standardization:

This DuraCal pH buffer is certified traceable to Primary Reference Material from NIST[2] and PTB[3].

The National Metrology Institutes compare their measurement capabilities periodically in key comparisons within the "Mutual Recognition Arrangement of National Measurement Standards and of Calibration Certificates issued by National Metrology Institutes (CIPM-MRA)". The international comparability, harmonization and the equivalence of their measurement capabilities is therefore ensured.

The lot number of the Reference Material used for this buffer is stated above. In order to obtain highest accuracy and reliability, the pH value is determined independently at Hamilton using secondary reference materials and at calibration laboratory D-K-15186-01-00 of ZMK[4] which is accredited for pH measurements and reference materials. The agreement between the two independent measurements is imperatively within the stated uncertainty. The actual value stated above is the value obtained at DAkkS. The DAkkS calibration certificate documents the traceability to national standards. The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.

A copy of the calibration certificate of D-K-15186-01-00 for this specific production lot can be obtained on request. The actual accreditation certificate of D-K-15186-01-00 is shown backside. The annexes stating the detailed scope of accreditation are part of the accreditation certificate and can be obtained from the DAkkS homepage *www.dakks.de* or the ZMK homepage *www.zmk-wolfen.de*.

The pH buffer formulation follows the recommendations of DIN 19267 with minor changes to increase stability.

The stated uncertainty of the pH value of the buffer solution is shown on the label (95% confidence interval). This uncertainty references to the "actual pH value" and is valid until the expiry date when stored according to the label on the bottle.

The temperature / pH table on the bottle is valid for the "actual value" accordingly.

[1]) Determined on a representative amount of sample (1 l out of 1000 l) at D-K-15186-01-00. The expanded uncertainty of the measurement is 0.02 pH.
[2]) National Institute of Standards and Technology, Gaithersburg, USA
[3]) Physikalisch Technische Bundesanstalt, Braunschweig, Germany
[4]) D-K-15186-01-00 – calibration laboratory accredited according to DIN EN ISO/IEC 17025 by Deutsche Akkreditierungsstelle (DAkkS)

Z M K
D-K-15186-01-00
DQS-zertifiziert nach DIN EN ISO 9001

Passed by Quality Control: 2017-04-03

Monica Zanolari

QB608485/04

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Instructions for Calibration with pH- and ORP Buffer Solutions

Intended use

The Hamilton Buffer solutions are intended for use as a calibration standard for pH sensors.

Storage condition

Closed bottle at 5 – 35 °C / 41 – 95 °F. Protect from direct sunlight.

Temperature influences

Both the pH/ORP values of the sample and the characteristics of the sensor are temperature dependent. Usually, the temperature dependency of the sample is unknown. It is important to always record the measurement temperature together with the measured value. In order to obtain the most accurate measurement, the electrode should always be calibrated at the same temperature as the measurements will be performed.

Instruction for use

For a one point calibration, select a buffer solution with a pH value as close as possible to your process. For a two point calibration, select a buffer solution just above and one just below of the expected pH value of your process.

We recommend to calibrate in the upper compartment of the pH buffer solution bottle. Clean/Rinse the pH / ORP sensor thoroughly with distilled/deionized water before use.

1. Open the cap of the bottle.
2. Force the needed amount into the upper compartment by pressing the bottle.
3. Calibrate your electrode directly in the upper compartment according to the instructions of your meter's manufacturer.
4. Dispose the used pH buffer and close the bottle again.

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2

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Zentrum für Messen und Kalibrieren & ANALYTIK GmbH

akkreditiert durch die / *accredited by the*

Deutsche Akkreditierungsstelle GmbH

als Kalibrierlaboratorium im / *as calibration laboratory in the*

Deutschen Kalibrierdienst

Kalibrierzeichen / *Calibration mark*: 10-3307 / D-K-15186-01-00 / 2017-03

Kalibrierschein / *Calibration certificate*

Gegenstand / *Object*	**Duracal Pufferlösung pH 9,21** REF 238268 *Buffer solution pH 9,21 REF 238268*
Hersteller / *Manufacturer*	**HAMILTON Bonaduz AG 7402 Bonaduz, Schweiz**
Typ / *Type*	**pH-Wert = 9,21 pH (25°C)**
Fabrikat/Serien-Nr. / *Serial number*	**Charge: LOT 1736390** *Lot No.: LOT 1736390*
Auftraggeber / *Customer*	**HAMILTON Bonaduz AG Via Crusch 8 7402 Bonaduz, Schweiz**
Auftragsnummer / *Order No.*	**1736390030**
Anzahl der Seiten des Kalibrierscheines / *Number of pages of the certificate*	**2**
Datum der Kalibrierung / *Date of calibration*	**01.03.2017**

Dieser Kalibrierschein dokumentiert die Rückführung auf nationale Normale zur Darstellung der Einheiten im Übereinstimmung mit dem internationalen Einheitensystem (SI).

Die Dakks ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.

Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the traceability to national standards, which realize the units of measurement according to the international System of Units (SI).

The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.

The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung sowohl der Deutschen Akkreditierungsstelle GmbH als auch des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.

This calibration certificate may not be reproduced other than in full except with the permission of both the Deutsche Akkreditierungsstelle GmbH and the issuing laboratory. Calibration certificates without signature are not valid.

Datum / *Date*	Stellv. Leiter des Kalibrierlaboratoriums / *Deputy Head of the calibration laboratory*	Bearbeiter / *Person in charge*
01.03.2017	Frau Dr. Dehnert	Frau Hanheiser

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DGG-zertifiziert nach DIN EN ISO 9001
Reg.-Nr.: 154774 QM

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