

Carbon Dioxide-L₃K

DCL has developed a unique technology for enzymatic bicarbonate determination that provides reagent stability and performance far beyond what is possible with conventional "regenerative" systems like INFINITY™ Carbon Dioxide from Sigma Diagnostics®.

The Solution is the Problem

Before the introduction of CO₂-L₃K technology, all enzymatic bicarbonate reagent calibration and on-board stability depended heavily on the behavior of a very unstable molecule, NADH. Although fairly stable at alkaline pH, the NADH cofactor degrades rapidly to NAD⁺ at a neutral pH. Without a reduced cofactor, bicarbonate reagents cannot function.

The problem is that all alkaline solutions, including alkaline bicarbonate reagents, readily absorb CO₂ from the atmosphere. Atmospherically derived bicarbonate consumes substrate decreasing the reagent's on-board and calibration stability which eventually leads to calibration drift and reagent failure.

While other companies feature a dynamic stabilization process to regenerate NADH from NAD⁺, we believe it would be better if it did not need to be regenerated in the first place.

Let's Remain Neutral

By utilizing a stable analog of NADH that does not degrade at a near neutral pH, CO₂-L₃K is the world's first near-neutral pH enzymatic bicarbonate reagent. Since CO₂-L₃K does not absorb atmospheric CO₂ as readily as highly alkaline NADH-based bicarbonate reagents, your lab can benefit from improved calibration and on-board stability.

	CO ₂ -L ₃ K	INFINITY™ CARBON DIOXIDE*
Linearity	2.9-50.0 mEq/L	50.0 mEq/L
Precision Within-Run	1.3% @ 13.5 mEq/L 1.7% @ 24.0 mEq/L	7.3% @ 10.0 mEq/L 1.4% @ 40.0 mEq/L
Precision Run-to-Run	1.7% @ 14.1 mEq/L 1.1% @ 24.8 mEq/L	8.0% @ 10.0 mEq/L 3.9% @ 40.0 mEq/L
Bilirubin (Icterus)	No significant interference to 40 mg/dL	No significant interference to 30 mg/dL
Hemoglobin (Hemolysis)	No significant interference to 600 mg/dL	No significant interference to 150 mg/dL

* Per Manufacturer's package insert

Carbon Dioxide-L₃K

Single vial, stable liquid, ready-to-use formulation, 14 month shelf life at 2-8°C

Cat. No. 299-30	Enzymatic, Rate, 415 nm	6 x 30 mL
Cat. No. 299-17	Enzymatic, Rate, 415 nm	5 x 100 mL
Cat. No. 299-50	Enzymatic, Rate, 415 nm	4 x 500 mL
Cat. No. 299-80	Enzymatic, Rate, 415 nm	1 x 1000 mL

Associated Products

Cat. No. SE-035	DC-Cal Calibrator	5 x 3 mL
Cat. No. SM-052	DC-Trol Level 1 Control (Normal)	10 x 5 mL
Cat. No. SM-056	DC-Trol Level 2 Control (Abnormal)	10 x 5 mL

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