



# Bicarbonate FS\*

In-vitro-Diagnostic for veterinary use only

Diagnostic reagent for quantitative in vitro determination of bicarbonate/total CO<sub>2</sub> in serum or plasma on DiaSys respons<sup>®</sup>910 VET

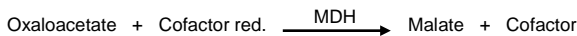
## Order Information

Cat. No. 1 0950 99 11 923  
4 twin containers for 200 tests each

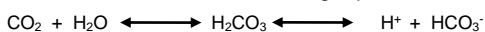
## Method

Enzymatic test using phosphoenolpyruvate carboxylase (PEPC) and a stable NADH analog

## Principle



The reaction disturbs the following equilibrium:



This results in a conversion of CO<sub>2</sub> to bicarbonate (HCO<sub>3</sub><sup>-</sup>) which then is included in the reaction. Therefore, the total CO<sub>2</sub> concentration is measured. The decrease of reduced cofactor concentration is measured at 405 nm and is proportional to the concentration of total carbon dioxide in the sample.

## Reagents

### Components and Concentrations

Buffer	pH 7.5	
Phosphoenolpyruvate (PEP)		12.5 mmol/L
Phosphoenolpyruvate carboxylase (PEPC)		> 400 U/L
Malate dehydrogenase (MDH)		> 4100 U/L
NADH analog		0.6 mmol/L
Standard		30 mmol/L

### Storage Instructions and Reagent Stability

Reagents are stable up to the end of the indicated month of expiry, if stored at 35.6 – 46.4°F, protected from light and contamination is avoided. DiaSys respons containers provide protection from light. Do not freeze the reagents! The standard is stable up to the end of the indicated month of expiry, if stored at 35.6 – 46.4°F and protected from light. Once opened, the standard is stable for 3 months, if recapped immediately after use.

### Warnings and Precautions

- The reagent contains sodium azide (0.8 g/L) as preservative. Do not swallow! Avoid contact with skin and mucous membranes.
- Reagent 1 contains animal material. Handle the product as potentially infectious according to universal precautions and good clinical laboratory practices.
- In very rare cases, samples of animals with gammopathy might give falsified results.
- Please refer to the safety data sheets and take the necessary precautions for the use of laboratory reagents. For diagnostic purposes, the results should always be assessed with the animal's medical history, clinical examinations and other findings.
- For professional use only!

### Waste Management

Please refer to local legal requirements.

### Reagent Preparation

Reagent and standard are ready to use. The reagent bottles are placed directly onto the reagent rotor.

### Specimen

Serum or heparin plasma

Serum or plasma should be separated from cells immediately and stored at 35.6 – 46.4°F. Exposure of samples to air should be avoided. Samples should be stored tightly sealed to prevent loss of carbon dioxide and assayed as soon as possible after collection.

Stability :

2 days at 39.2°F to 46.4°F

Discard contaminated specimens.

## Calibrators and Controls

For calibration DiaSys Bicarbonate Standard FS is recommended. This method has been standardized against a primary standard on basis of sodium carbonate. For internal quality control DiaSys TruLab Bicarbonate control should be assayed. Each laboratory should establish corrective action in case of deviations in control recovery.

	Cat. No.	Kit size
Bicarbonate Standard FS	1 0950 99 11 030	6 x 3 mL
TruLab Bicarbonate	5 9700 99 11 065	3 x 3 mL

## Performance Characteristics

The performance characteristics were evaluated with human samples and might differ from results obtained with various animal specimen.

Measuring range up to 50 mmol/L bicarbonate (in case of higher concentrations re-measure samples after manual dilution with NaCl solution (9 g/L) or use rerun function).	
Limit of detection**	4 mmol/L bicarbonate
On-board stability	3 weeks
Calibration stability	2 weeks

Interfering substance	Interferences < 10%	Bicarbonate [mmol/L]
Ascorbate	up to 30 mg/dL	18.3
Hemoglobin	up to 500 mg/dL	19.1
	up to 500 mg/dL	38.2
Bilirubin, conjugated	up to 60 mg/dL	22.7
	up to 60 mg/dL	42.6
Bilirubin, unconjugated	up to 55 mg/dL	17.6
	up to 55 mg/dL	38.8
Lipemia (triglycerides)	up to 1700 mg/dL	19.2
	up to 1700 mg/dL	34.7





For further information on interfering substances refer to Young DS. Effects of Drugs on Clinical Laboratory Tests. 5th. ed. Volume 1 and 2. Washington, DC: The American Association for Clinical Chemistry Press, 2000.

\*\* according to NCCLS document EP17-A, vol. 24, no. 34

## Conversion Factor

Bicarbonate [mmol/L] = Bicarbonate [mEq/L]

## Reference Range

				
DOG	CAT	HORSE	CATTLE	Unit
14 – 25	12 – 21	21 – 32	24 – 33	mmol/L

Source:

Reference ranges have been validated by DiaSys USA according to National Reference Laboratory standards.

Each laboratory should check if the reference ranges are transferable to its own animal population and determine own reference ranges if necessary.

## Manufacturer

DiaSys Diagnostic Systems GmbH  
Alte Strasse 9 65558 Holzheim Germany