
Lab Dept: Chemistry

Test Name: CO2 TOTAL

General Information

Lab Order Codes: TCO2

Synonyms: Bicarb, Bicarbonate, Carbon Dioxide, Total; CO2

CPT Codes: 82374 – Carbon dioxide (bicarbonate)

Test Includes: CO2 concentration in mEq/L. Total CO2 is also included in the following panels: [Electrolyte Panel](#), [Basic Metabolic Panel](#), [Comprehensive Metabolic Panel](#), [Renal Panel](#)

Logistics

Test Indications: Useful for evaluation of acid-base balance and the body's ability to control pH. Bicarbonate ion is the principle transport form for CO2.

Lab Testing Sections: Chemistry

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 30 minutes

Special Instructions: N/A

Specimen

Specimen Type: Whole blood

Container: **Preferred:** Green top (Li Heparin) tube
Alternate: Red, marble or gold top tube

Draw Volume: 0.6 mL blood

Processed Volume: 0.2 mL plasma/serum

Collection: Collect sample anaerobically to minimize exposure to air for TCO2.

Special Processing:	Lab Staff: Centrifuge specimen, remove serum/plasma aliquot into plastic sample cup. Analyze sample immediately or store at refrigerated temperatures. Once the sample is opened (uncapped), the sample must be processed within 1 hour for TCO ₂ .
Patient Preparation:	None
Sample Rejection:	Mislabeled or unlabeled specimens; sample submitted in incorrect tube

Interpretive

Reference Range: 18 - 26 mEq/L

Critical Values: <10 or >40 mEq/L

Limitations:

- CO₂ decreases when uncapped specimens are exposed to air.
- Underfilling of vacutainer collection tubes may decrease CO₂ results by as much as 3 mEq/L.

Methodology: Enzymatic Carbonate

References: ECO₂ Flex® reagent cartridge insert sheet Part number 717137.101
Version F (2008-06-09)

Dimension RxL MAX Operator's Guide (05/2003)

Tietz Textbook of Clinical Chemistry (1999) 3rd Edition, W.B. Saunders Company

Clinical Significance, Dade Behring Inc., Glasgow Business Community, Mailbox 531, P.O. Box 6101, Newark, Delaware 19714

Jacobs & DeMott Laboratory Test Handbook (2001) Lexi-Comp, Inc, Hudson, OH, 5th Edition, 2001

Updates: 2/14/2005: Critical values previously listed as <10 to >35 mEq/L.
8/19/2009: Turnaround time previously listed as 2 hours.
4/24/2013: Conversion to enzymatic CO₂ on backup instruments.
2/9/2016: Update alt tube type