Part I

Blood Gas Analysis Interpretation Table

Normal Blood Gas Reference Ranges in Dogs and Cats

pH: 7.35 to 7.45
pCO_2: 35 to 45 mm Hg
HCO_3^-: 20 to 25 mEq/L (mmol/L)
BE: -4 to 4 mEq/L (mmol/L)

Respiratory Component → Lungs
Metabolic Component → Kidneys

The table below helps determine if a mixed acid-base disorder or a primary disturbance is present

↓ pH **Acidemia**	↑ pH **Alkalemia**
↑ PCO_2 Respiratory Acidosis	↓ PCO_2 Respiratory Alkalosis
↓ HCO_3^- or BE Metabolic Acidosis	↑ HCO_3^- or BE Metabolic Alkalosis

pH: potential of hydrogen or power of hydrogen, the negative base 10 logarithm of the hydrogen ion concentration (blood pH reflects hydrogen ion concentration in blood)
pCO_2: partial pressure of carbon dioxide
HCO_3^-: bicarbonate ion
BE: base excess
Acidemia: the state of abnormally low blood pH
Alkalemia: the state of abnormally high blood pH
Acidosis: the process causing or leading to the state of acidemia
Alkalaosis: the process causing or leading to the state of alkalemia

The aim of the body is to maintain acid-base homeostasis by aiming to maintain a neutral blood pH within a narrow range of ~7.35 to 7.45 whenever possible.

pH varies inversely with changes in the respiratory component
pH varies directly with changes in the metabolic component

Think: "ROME"
Respiratory Opposite
Metabolic Equal

See the Vetpocket app for more detailed reference material, including a Blood Gas Analysis e-book AND a Blood Gas Calculator!