

# EQUISTRO



**Description:** Sodium bicarbonate is an alkalinising agent. It is a white, crystalline powder having a slightly saline or alkaline taste. It is soluble in water and insoluble in alcohol.

**Properties:** • Sodium bicarbonate is used as an antacid. Modern equine management practices have resulted in horses being exposed to situations vastly different to those in which they evolved, including solitary stall confinement, limited grazing, grain as an energy source, and meal feeding. One debilitating condition influenced by modern horse management is ulceration of both the stomach and colon. Hindgut acidosis (HGA) is a potential problem in horses consuming large quantities of grain or fructan rich forages. Horses suffering from HGA may develop anorexia, colic, laminitis or display stereotypical behaviours such as wood chewing and stall weaving. Feeding protected sodium bicarbonate attenuated a decrease in faecal pH and increase in faecal lactate concentration. For HGA, sodium bicarbonate has to be protected by special methods because in horses, raw sodium bicarbonate never makes it to the hindgut, it just buffers the stomach. Unlike

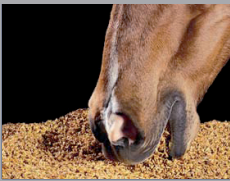
humans, horses continuously secrete gastric acid, and ulcers are the result of erosion of the stomach lining due to prolonged exposure to this gastric acid. Thus, sodium bicarbonate usage can be of interest in case of gastric ulcers at least on a short term basis.

• The sodium bicarbonate may delay the fatigue precipitated by muscular acidosis. Lactic acid accumulates in skeletal muscles and body fluids during and following high-intensity exercise. At the pH of normal muscle tissue, the lactic acid is highly dissociated into lactate and H<sup>+</sup> ions. These ions accumulate, lowering the pH and reducing the activity of glycolytic enzymes, probably impairing the contraction process of working muscles, expressed as fatigue. The effect of sodium bicarbonate on lactate clearance may have implications for all intensively worked horses; because any mechanism to increase removal rate of lactate and H<sup>+</sup> could benefit the equine athlete. Theory suggests that a small amount of sodium bicarbonate will help the horse recover after a race by dissipating muscle lactate.

**Possible uses:** • Sodium bicarbonate is sometimes administered as an alkalinising agent to racehorses in an attempt to enhance performance and delay the time to fatigue. For years, it has been common practice to administer small quantities of sodium bicarbonate prior to a race. However, the use of alkalinising agents before a race is discouraged, or leads to disqualification, in many racing jurisdictions (considered as doping!). No effect of sodium bicarbonate is observed over a 1km-race.

• Once thought only to affect elite equine athletes, ulcers are prevalent in all sectors of the equine population — from broodmares to ponies, racehorses to show horses. Sodium bicarbonate can be used for horses: at risk of gastric and colonic ulcers; in training or work; on high-grain diets; experiencing stressful conditions such as travel, show/sale preparation, and weaning; with unexplained behavioural problems, with weight loss of unknown origin; prone to mild colic with no obvious reason; susceptible to laminitis; with digestive upsets.

## SODIUM BICARBONATE



**Vétoquinol**  
Signe de Passion

