



# Merrick's **TECH BULLETIN**

## Mineral Chelates

Mineral chelates are organic trace minerals designed to enhance mineral absorption and improve bioavailability. Common inorganic forms of trace minerals may interact with other feed ingredients such as lipids, proteins, fiber or other minerals, inhibiting absorption. When minerals are bound to chelating agents such as amino acids and hydrolyzed proteins they become more stable and are much less reactive in the digestive tract. In fact, chelation is a naturally occurring process in the body for transporting minerals across the intestinal wall during digestion.

Merrick's Inc. provides organic forms of zinc, copper and manganese for incorporation in milk replacers.

**Zinc:** Zinc is important in enzymes involved in protein synthesis in the body. It has a major effect on the animal's immune system and is required for the development and activation of T-lymphocytes, a kind of white blood cell that helps fight infection. Zinc also helps protect the body through its strong antioxidant function.

**Copper:** Copper is an enzyme activator and enzyme constituent. It is a key component of the immune system and is needed for iron metabolism and red blood cell formation.

**Manganese:** Manganese plays a major role in enzyme systems, bone growth, protein digestion and lipid metabolism. Diets low in manganese cause heifers and cows to be slower in exhibiting estrus and more likely to have "silent heats" and a lower conception rate.

Research with organic trace minerals shows improvements in animal production and performance characteristics such as feed efficiency, growth, breeding, body composition and hoof integrity. Calf research shows improved mineral retention during stress when organic trace minerals are fed. Calves also show an improved immune response to vaccinations as indicated by higher antibody titers.

The first few weeks after birth may well be the most stressful and challenging period during a calf's life. Proper intake and availability of essential minerals is critical to help minimize the effects of common environmental and disease stresses and to help the calf overcome these challenges. Incorporating organic trace minerals into their milk replacer is an easy and cost-effective way to assure both adequate intake of essential minerals and improved bioavailability for better results.

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