AminoShure™-XM

Precision Release Methionine

AminoShure™-XM is the next generation in rumen-protected methionine and introduces Balchem's new X-technology. The X-technology coating system provides the optimal combination of cost, feed stability, rumen stability and intestinal release to deliver competitive cost per unit of available methionine.

- **Cost** – The new X-technology has improved the nutrient bioavailability, which, in effect, lowers the encapsulation costs per unit of metabolizable methionine.
- **Feed Stability** – The new X-technology employs a true lipid-based system that is more durable than polymer and ethylcellulose coatings.
- **Rumen Stability** – The X-technology has been masterfully designed to resist ruminal degradation, maximizing the nutrient payload delivered to the small intestine.
- **Intestinal Release** – The X-technology gradually meters the methionine into the small intestine where it is absorbed and utilized by the cow to maximize productivity.

AminoShure™-L

Precision Release Lysine

AminoShure™-L delivers the essential amino acid, lysine, in a rumen-protected form. The revolutionary, lipid coating was engineered to release its lysine payload gradually in the small intestine.

- **Consistent** – AminoShure-L provides the consistency you can count on when balancing for precise levels of amino acids to meet the exact nutritional needs of the animal.
- **Reliable** – AminoShure-L has been subjected to the same rigorous testing and development protocols as the other encapsulates in the Balchem lineup and offers the same precision nutrient delivery that you've come to expect from Balchem products.
- **Cost-Effective** – By leveraging Balchem's innovative encapsulation technologies and manufacturing efficiencies, we can provide an effective replacement for blood meal, reducing variability in both ration cost and quality.

VitaShure®-C

Precision Release Vitamin C

VitaShure®-C is a feed stable, encapsulated source of vitamin C for all species of animals. Ascorbic acid is encapsulated using a unique coating system. Raw ascorbic acid is often lost during common feed manufacturing processes or through prolonged storage, making supplements containing raw ascorbic acid inconsistent.

- **Feed Stable** – The encapsulation on VitaShure-C overcomes inconsistent losses, delivering vitamin C through feed processing and storage and to the small intestine, where it is released and absorbed by the animal.
- **Rumen Stable** – Vitamin C is degraded by microbes in the rumen, and minimal amounts escape to the small intestine. VitaShure-C is protected from rumen degradation and is released in the small intestine, where it's absorbed and utilized.
- **Enhanced Immune Function** – Glucocorticoids are key hormones for mediating the effects of stress on immunity. Vitamin-C helps block the negative effects of glucocorticoids.

balchem

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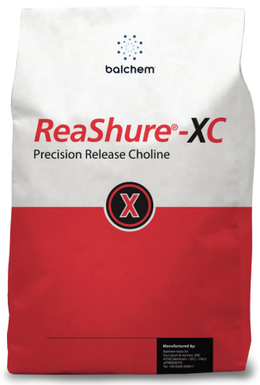
ReaShure®-XC

Precision Release Choline

Combining advanced core technology and industry-leading encapsulation, ReaShure®-XC is the most researched, effective, cost-efficient and concentrated form of rumen-protected choline on the market today. Feeding ReaShure-XC is a proven way to meet the dietary choline requirements during the important transition period and help launch your cows for life.

- **Deliver Higher Peak Milk** – Studies show that cows receiving ReaShure during transition produced 2,10 kg more milk per day, or 640,50 kg more milk over the full lactation.
- **Reduce Metabolic Disorders** – ReaShure delivers a proven reduction in metabolic disorders including ketosis, displaced abomasum and subclinical milk fever.
- **Calf Health and Growth** – New research shows the link between prenatal choline supplementation and calf performance.

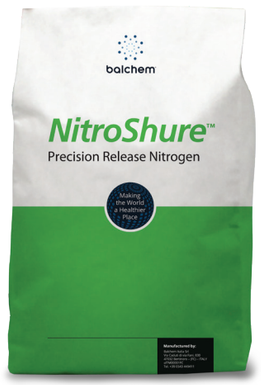


NitroShure™

Precision Release Nitrogen

NitroShure™ provides a consistent nitrogen supply to rumen microbes. This helps maximize microbial protein yield, improve dry matter digestibility and provide greater flexibility in formulating high-performance dairy rations. NitroShure is a valuable tool helping producers and nutritionists reduce ration costs while increasing the amount of high-quality protein available to the cow.

- **Improve Digestible Protein Yield and Quality** – Replace low-quality proteins with NitroShure. Synchronizing nitrogen release with available carbohydrates in the rumen leads to improvements in microbial protein production.
- **Improve Fiber Digestion and Dry Matter Utilization** – Microbial mass and activity is increased when available carbohydrates and nitrogen are balanced, resulting in greater dry matter utilization, fiber digestion and volatile fatty acid production.
- **Create Ration Space** – Replace less dense sources of protein with NitroShure to create approximately two pounds (0.9 kg) of dry matter space in the diet.
- **Lower Ration Costs** – Replace more expensive protein sources with NitroShure to reduce purchased feed costs.



NiaShure™

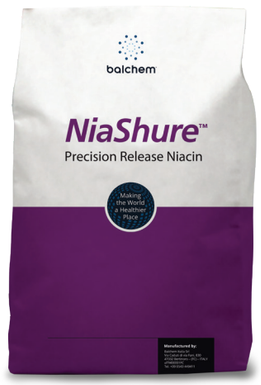
Precision Release Niacin

NiaShure™ is an encapsulated form of niacin that delivers more bioavailable niacin to the small intestine. Niacin is included in rations to take advantage of both its vasodilation and antilipolytic properties.

Reducing body fat mobilization in fat cows can reduce ketosis and related transition cow disorders. Research at the University of Wisconsin demonstrated a significant reduction in blood NEFA when NiaShure was fed to transition dairy cows.

Research conducted at the University of Arizona found that NiaShure had a significant impact on the cow's ability to manage heat stress. NiaShure helps:

- **Lower Blood NEFA Levels** – Niacin is widely recognized as a potent anti-lipolytic agent capable of reducing the surge in NEFA seen prior to parturition.
- **Increase Sweating Rate by 24%** – Increasing sweating rates can dramatically increase a cow's ability to cool herself.
- **Reduce Internal Body Temperature** – Keeping body temperatures in normal ranges will help cows function at peak performance.
- **Increase Productivity** – Reducing the heat stress on cows can have a profound impact on health, reproductive performance and milk production.



KeyShure®

Precision Release Minerals

The **KeyShure** line of chelated trace minerals are proven to deliver higher bioavailability as compared with other chelated and inorganic minerals. Greater bioavailability means improved animal performance and producer profitability.

Zinc is required for normal immune function, reproductive performance, skin and hoof health, muscle development, milk production and eggshell quality.

Manganese is required for normal immune function, reproductive performance, digestion, metabolism and healthy bone growth.

Copper is required for normal immune function, reproductive performance, skin and hoof health, iron metabolism and bone development and maintenance.

Iron is required for oxygen transport, normal immune function, milk production and muscle development.