

**INTRODUCING**

# PuraChol™

Choline Chloride

THE INDUSTRY'S  
PREMIER CHOLINE



**balchem**

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Choline Chloride

## QUALITY, PURITY, CONSISTENCY

PuraChol™ from Balchem is the leading line of choline chloride products available in the industry. PuraChol delivers the highest standards of quality backed by the strictest process controls, for a level of purity, safety and consistency you can't find anywhere else.

### The PuraChol line includes:

#### Dry Choline Chloride

- 50% on silica carrier
- 60% on vegetable carrier
- 70% on vegetable carrier
- 75% on vegetable carrier
- 80% on vegetable carrier

#### Liquid Choline Chloride

- 75% aqueous solution

All PuraChol products manufactured in our European facility of Marano Ticino are non-GMO.

#### Choline Specialty Grades

We co-develop new products with our customers to overcome specific issues like hygroscopicity and product caking. We also create custom solutions for special applications.

- **CholFlow**, a high-performance granular choline chloride 70% on non-GMO vegetable carrier designed to provide superior flowability and reduced interaction with other ingredients. CholFlow is less hygroscopic than standard choline chloride and is recommended for use in critical premixes with high concentration and high trace mineral levels, which can have destabilizing effects on vitamins.
- **CholFine**, is unique to the industry with a particle size that is 30% finer than other dry choline products. The smaller particle size is ideal for direct dosing and ensures the homogeneity of the mix required for extruded pellet preparation. This makes CholFine the optimal choice for extruded feeds manufactured for aquaculture and pet food to help maintain superior pellet quality. CholFine flows through production equipment evenly and consistently under the most challenging production circumstances. It allows for the precise and consistent dispersion of choline into premixes and complete feed mixes while avoiding caking issues as well.



# ALL CHOLINE PRODUCTS ARE NOT CREATED EQUAL.

While all choline chloride products are formulated using the same basic molecule, significant differences exist among commercial choline brands and the companies that market them. These differences are seen in product quality testing programs, raw ingredient supply controls and proprietary manufacturing techniques. Differences also extend beyond product to the intangible, but consumer-driven areas such as social responsibility, industry research support and environmental stewardship.

Balchem has invested more than 50 years in research, manufacturing advances and raw ingredient testing and sourcing to ensure you receive the highest quality, purest choline chloride possible.

## BALCHEM DELIVERS

- Total supply chain control
- Unmatched raw material standards
- Strictest manufacturing standards
- Highest purity standards
- Comprehensive product portfolio
- Consistent quality
- Reliable customer service
- Technical expertise and support
- Inventory management
- Social responsibility
- Environmental stewardship
- Research leadership
- Industry support
- Multiple production locations
- Global presence



# THE PURACHOL™ DIFFERENCE?



## State-of-the-Art Manufacturing

As the worldwide leader in choline chloride, Balchem has perfected the manufacturing process and continues to leverage the latest manufacturing technologies that improve purity, consistency, reliability and concentration options. Balchem's choline expertise encompasses both human and animal nutrition with US and European manufacturing facilities certified for human nutrition-grade choline production.

The same care and expertise required to manufacture choline for infant formula is also employed to produce choline for poultry, swine, fish and pet diets. That level of quality can only be accomplished through strict process control and rigorous employee training; which is reflected in our extensive list of quality-oriented certifications.

Our European manufacturing site in Marano Ticino, Italy, serves as the regional headquarters for customers in Europe, Middle East, Africa and Asia markets. The site started production in 1968 and stands out as the only backward-integrated choline chloride manufacturer in Europe, producing a wide range of liquid, dry and specialties choline grades to meet customer needs.



## Quality Control

Balchem sets the highest industry standards for choline chloride production, maintaining high and consistent levels of choline while monitoring and reducing undesirable contaminants. The integrity of Balchem products starts with supplier quality, and supplier selection is an integral element of our quality system.

Traceability is guaranteed from the raw material to the finished product. The emission of the certificate of analysis seals a series of product and process controls, certifying the quality of the finished product.

Particular attention is paid to the sampling method, always representative of the lot, the management of analytical data, the validation of methods, calibration of instruments and to the training of personnel. Quality does not stop at the analyses but also includes the supply of all documentation supporting the products: technical data sheets, declarations of conformity, statements, and regulatory support on specific questions at the request of customers. Our Quality Management System is regularly audited by certification bodies, health authorities and customers. We conduct regular supplier audits to encourage and ensure compliance and new suppliers are required to go through a comprehensive evaluation and approval process.

Balchem maintains a vigorous monitoring program for all finished goods. We release on a regular basis a quality report to our customers documenting the results of our extensive testing program.

### BALCHEM CERTIFICATIONS

US FACILITIES	EU FACILITIES
FAMI-QS	FAMI-QS
Safe Feed/Safe Food	ISO 22000/FSSC (GFSI compliant)
	ISO 9001
	ISO 14001
	SEDEX

### BALCHEM TESTING PARAMETERS

Choline Activity Level	GMO's
Heavy Metals	Particle Size
Microorganisms	Trimethylamine
Mycotoxins	Pesticides
Dioxins	

Limits are determined according to internal specifications and EU Regulations (Dir. 2002/32/EC and Reg. 1829/2003/EC, 1830/2003/EC).



## Research Leader

As the global leader in choline, Balchem has taken the lead on choline research, in both the human and animal spaces. Balchem has established and supports a scientific advisory board with participating member/researchers from Cornell University, Syracuse University and UC Davis. The advisory board was created to help direct research toward better understanding choline’s role in infant cognition, age-related cognitive decline and liver health.

Balchem scientists continue to monitor choline levels in standard feed ingredients to ensure rations contain adequate levels to deliver optimal animal performance. The latest data, presented by Balchem scientists at the 2019 Poultry Science Annual Meeting, showed that analyzed choline levels were 24% lower in SBM and 9% lower for corn than those reported in the current NRC (Poultry 1994). This discrepancy, coupled with a potentially greater choline requirement of today’s genetically superior production animals, could be seriously compromising productivity and producer profitability.



## Sustainability

Sustainability is at the heart of Balchem’s mission to make the world a healthier place.

Every day, Balchem delivers creative and innovative solutions that enhance health and well-being through science. Our businesses supply essential nutrients to people and animals around the world, with approximately 1.4 billion people positively impacted in some way by our products every year.

The PuraChol line helps deliver on Balchem’s sustainability promise through higher concentration formulations that provide more choline while reducing transportation costs and lowering fuel consumption.

PuraChol also improves production efficiency of each animal, helping them produce more with fewer overall inputs.

### CHOLINE CHLORIDE SUPPLEMENTATION RATES REQUIRED WHEN USING NRC AND ACTUAL VALUES FOR SBM

SUPPLEMENT	USING NRC (1994) VALUES	USING ANALYZED VALUES
Choline Chloride 70 % (g/t)	204*	589**

\* equivalent to 0.45 lb./ton    \*\* equivalent to 1.30 lb./ton



# 1.4 BILLION PEOPLE IMPACTED

# THIS IS ANIMAL NUTRITION & HEALTH

## RUMINANT

**ReaShure<sup>®</sup>-XC**  
Precision Release Choline

**AminoShure<sup>™</sup>-XM**  
Precision Release Methionine

**AminoShure<sup>™</sup>-L**  
Precision Release Lysine

**NitroShure<sup>™</sup>**  
Precision Release Nitrogen

**NiaShure<sup>™</sup>**  
Precision Release Niacin

**Fibrase<sup>™</sup>**  
Rumen Fermentation Enhancer

**KeyShure<sup>®</sup>**  
Chelated Minerals

**KeyShure<sup>®</sup>Plus**  
Chelated Minerals

## MONOGASTRIC

**PuraChol**  
Choline Chloride

**Tannin<sup>™</sup> 50**  
Encapsulated Tannin

**ProAcid<sup>™</sup>**  
Encapsulated Acid

**KeyShure<sup>®</sup>**  
Chelated Minerals

**KeyShure<sup>®</sup>Plus**  
Chelated Minerals

Balchem Animal Nutrition and Health is the global leader in choline production, chelation and encapsulation technology. With a growing portfolio of nutrition products and a dedication to innovation and industry sustainability, Balchem is leading the charge to meet the nutritional needs of ruminants, monogastrics and companion animals.

### WE ARE:

#### Real People

With a passion for animal nutrition, we are intense advocates for our customers and the animals they feed. You can count on us to provide honest, candid advice to address your toughest challenges.

#### Real Science

Balchem delivers proven science backed by years of success. Our products are some of the most extensively researched in the industry, further supported by documented on-farm results.

#### Real Results

In the end, it all comes down to results. We deliver real results you can count on – results that exceed your expectations and deliver value to your customers and your bottom line.



Balchem Italia Srl  
Via del Porto Snc  
28040 Marano Ticino (NO)  
Italy

Telephone +39 0321 9791  
E-mail [anh-italy@Balchem.com](mailto:anh-italy@Balchem.com)  
Website [BalchemANH.com](http://BalchemANH.com)  
LinkedIn [linkedin.com/showcase/balchem-emea](https://www.linkedin.com/showcase/balchem-emea)