

# Glycinates

## Essential for health and performance

Small quantities – big impact: Glycinates with organically bound copper, iron, manganese or zinc.

- Better absorption and bioavailability
- Essential nutrients for metabolism
- Excellent flowability and mixing behaviour
- Perfect combination of efficiency and animal performance



The science of sustainable feed that succeeds

[animalnutrition-global@basf.com](mailto:animalnutrition-global@basf.com)  
[animal-nutrition.basf.com](http://animal-nutrition.basf.com)

## Superior bioavailability and optimal supply of trace elements

In the past, trace elements were added to the feed in the form of inorganic salts such as sulfates and oxides. Only a limited percentage was absorbed by the animal – the major part ended up in the manure. Quite a waste both financially and environmentally. Today, organically-bound trace elements such as glycinates are commonly used in animal feeds, since they show higher bioavailability. This results in increased animal performance and better animal vitality and productivity.

BASF glycinates are very easy to digest with excellent solubility for optimal absorption.

## Nutritional effect:

- Feeding livestock with higher amounts of energy and amino acids requires adjustment of trace element levels to ensure a balance of the nutrient supply.
- Insufficient trace elements cause deficiency diseases or malnutrition symptoms, especially for young animals, like:
  - lower feed intake and growth reduction
  - impaired immune function
  - susceptibility to diseases
  - reduced fertility

# Trace elements: Essential and indispensable

BASF glycinate are providing our customers with trace elements in a form that is highly sufficient and guaranteed to fulfill animal requirements.

BASF glycinate can be dissolved directly in water and do not need to be dissolved beforehand. Since they have less potential to build complexes with phytate, a higher absorption rate by gut mucosa an even greater efficiency from supplemented phytase can be expected.



## Copper

Important for the connective tissue. This means that it plays an important part in the health of your animals' skin and cardiovascular health, but also in the process of eggshell production. Furthermore, copper protects against oxidation and it is needed as a co-factor for various enzymes.



## Iron

Responsible for oxygen binding in blood cells. It is also the main ion in many enzymes and plays a central role in antioxidative processes. Lack of iron leads to exhaustion and reduced performance.



## Manganese

Essential for cartilage formation and the reproductive system. It protects against oxidation and is required for your animals' energy supply and wellbeing.



## Zinc

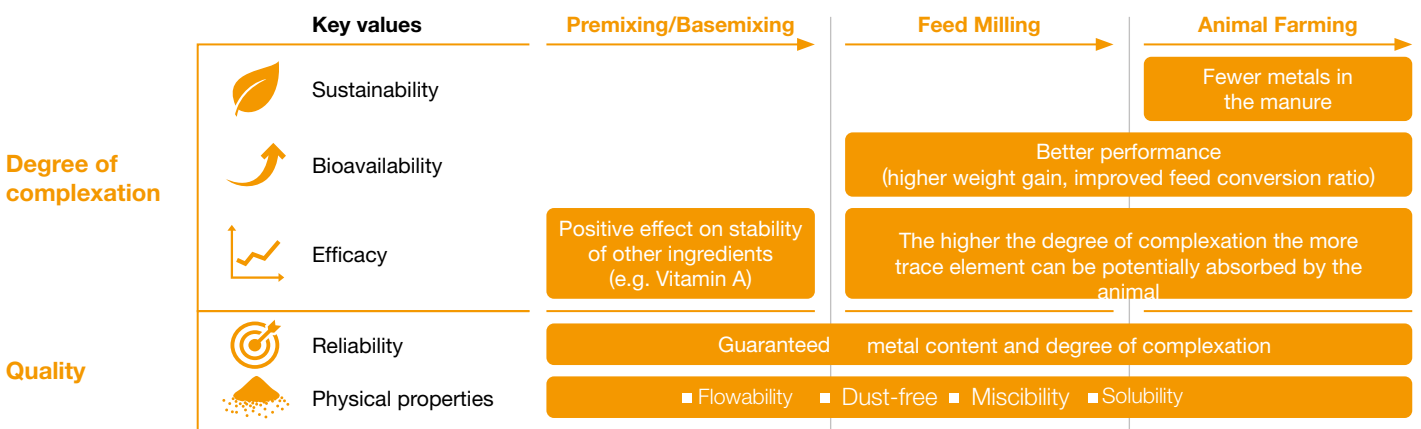
Important for collagen synthesis and keratin formation in hoof, skin, wool, hair and feathers. It also has a barrier function, protects against oxidation, and has a regulatory role in both cell turnover and repair of oxidative damage. Zinc is not only responsible for the reproductive and immune system, but also for proper growth according to your animals' full genetic potential. Additionally, zinc is a co-factor in more than 200 enzymes.

Thanks to the superior production process of the BASF glycinate you can rely on:

- constant content of trace elements
- excellent flowability
- perfect miscibility and water solubility
- uniform particles
- no dust or lumps and easy to handle
- no odor

With glycinate, potentially smaller quantities are needed to supply the animals' net needs, therefore the environment benefits from less excreted trace elements. By using glycine, the smallest amino acid occurring in nature, it is possible to form the smallest amino acid trace element complex with the highest mineral content.

## Gain value with degree of complexation and quality



This document, or any information provided herein does not constitute a legally binding obligation of BASF and has been prepared in good faith and is believed to be accurate as of the date of issuance. Unless expressly agreed otherwise in writing in a supply contract or other written agreement between you and BASF:

- (a) To the fullest extent not prohibited by the applicable laws, BASF EXPRESSLY DISCLAIMS ALL OTHER REPRESENTATIONS, WARRANTIES, CONDITIONS OR GUARANTEES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, BY FACT OR LAW, INCLUDING ANY IMPLIED WARRANTIES, REPRESENTATIONS OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, NON-INFRINGEMENT, AND ANY REPRESENTATIONS, WARRANTIES, CONDITIONS OR GUARANTEES, ARISING FROM STATUTE, COURSE OF DEALING OR USAGE OF TRADE and BASF HEREBY EXPRESSLY EXCLUDES AND DISCLAIMS ANY LIABILITY RESULTING FROM OR IN CONNECTION WITH THIS DOCUMENT OR ANY INFORMATION PROVIDED HEREIN, including, without limitation, any liability for any direct, consequential, special, or punitive damages relating to or arising therefrom, except in cases of (i) death or personal injury to the extent caused by BASF's sole negligence, (ii) BASF's willful misconduct, fraud or fraudulent misrepresentation or (iii) any matter in respect of which it would be unlawful for BASF to exclude or restrict liability under the applicable laws;
- (b) Any information provided herein can be changed at BASF's sole discretion anytime and neither this document nor the information provided herein may be relied upon to satisfy from any and all obligations you may have to undertake your own inspections and evaluations;
- (c) BASF rejects any obligation to, and will not, automatically update this document and any information provided herein, unless required by applicable law; and
- (d) This document or any information provided herein must not be used for purposes of pharmaceutical registrations.
- If you have any further questions or need additional support, please contact your BASF sales representative.