

# BMP<sup>®</sup> TECHNOLOGY

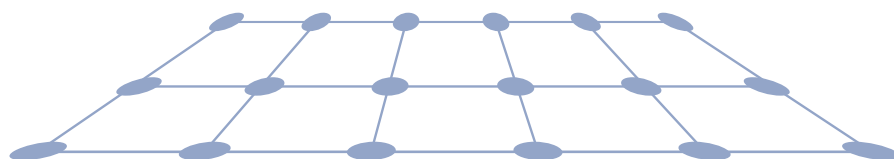
A BREATH OF INNOVATION

dox-al

Hi-tech

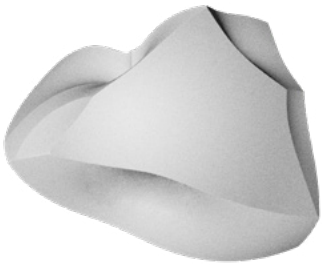
# BMP

BI-MODAL PROTECTION



# The technological process

## GRANULAR CARRIER



## TYPES OF CARRIER

Depending on the type of feed to which the active ingredient is to be added, different types of carriers, such as calcium carbonate or hazelnut fibre, can be selected.

Preference is given to carriers that are inexpensive and easy to find, as well as technically valid.

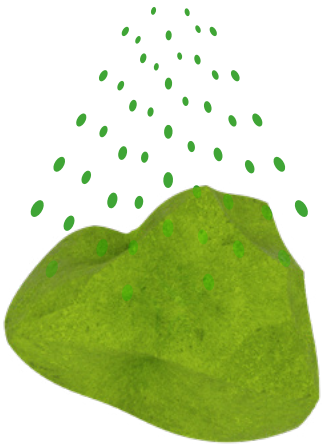
## CHEMICAL AGENTS AND EXCIPIENTS

According to the type of mix in which it is to be used, the granules can be coated with lipophilic and/or hydrophilic agents, whose function is to neutralize the granules to prevent attractive or repulsive forces with other ingredients of the feed.

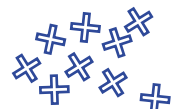
## STEPS OF BMP® GRANULE PRODUCTION



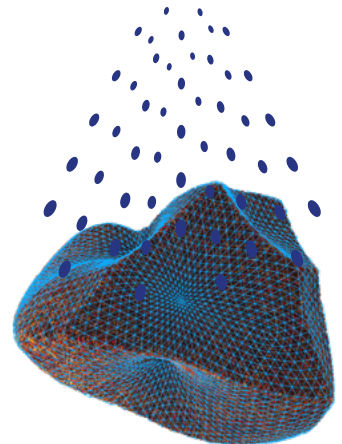
BMP® BINDING AGENT



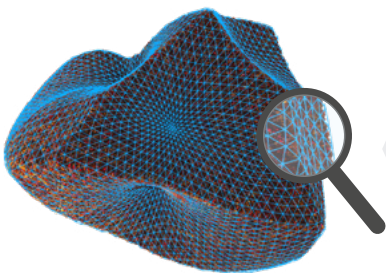
ACTIVE INGREDIENT



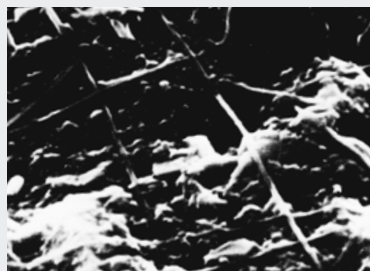
BMP® FILM-COATING AGENT



## GRANULE BMP®



## RETICULAR MICROSTRUCTURE



Unlike traditional premixtures obtained simply by diluting the active ingredients, with BMP® technology, stability is increased by the protective coating that reduces the inactivating effects of air, moisture and trace elements, and enhances the flowability.

### Features of BMP® granules:

- Average particle size distribution 500-700
- Flowability index <5"
- Adhesion index <0.25/25 g
- Total dustiness <2 mg/Heubach filter
- Particle size <50 microns: less than 1%

# BMP® technology



BMP® technology originates from a far-sighted idea: to **continuously improve** the company's products and production processes with a view to increasing efficiency in performance and well-being.

A process that consists in enhancing not only animal health but also the health of the operators.

**A minor revolution with important results that Dox-al has put at everyone's disposal since 1987.**

BMP® IS A PRODUCTION TECHNOLOGICAL PROCESS CAPABLE OF MODIFYING THE PHYSICOCHEMICAL PROPERTIES OF A MICROINGREDIENT WITH A VIEW TO GUARANTEEING:



**Quality**



**Efficacy**



**Safety**

## ADAPTING SIZE FOR AN EASIER DOSAGE



A uniform distribution of the active ingredient depends on one characteristic: **FLOWABILITY**.

When it is low, as in powders, overdosage or underdosage may occur. BMP® technology enables the technological properties of a microingredient to be modified, by increasing the particle size, whether it is an additive, premixture or complementary feed. In this way, flowability increases, thus improving the dosing accuracy of the products mixed.

## A QUESTION OF STABILITY



With BMP® technology all the particles of the various active ingredients, which could degrade if they come into contact with one another, **REMAIN SEPARATE**.

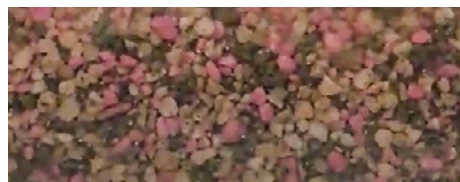
The BMP® granules ensure the stability of the single elements, because each granule is made up of homogeneous particles: the contents of one granule are protected against contact with the contents of another granule.

# Homogeneous dispersion

The degree of miscibility of the active ingredients protected by BMP® technology and dispersed in the feed has been subjected to numerous tests based on investigations and assessments made by the company's in-house control system and also by international study organizations.

With a view to determining the uniform presence of additives or medicated active ingredients, the tests carried out many times over a period of several decades have demonstrated the degree of homogeneous dispersion and the stability of the mixing process after time and also after the handling of loads.

**THE SECRET? A careful selection of carriers and film-coating agents, on the basis of the composition and particle size of the final feed.**



## EMISSION OF DUST OBSERVED AT THE HEUBACH FILTER



cobalt 5% BMP®  
residue: <0.1 mg



cobalt 5% powder  
residue: 127 mg



Cobalt(II) carbonate in DOX-AL coated granules (3b304 in European nomenclature) is the only substance authorized for use in feeds without the obligation to pelletize or adopt special protective measures.

# Health and safety at the workplace



Safety at feed production plants and on farms is an increasingly important issue for the employers of the operators who work there. BMP® enables active substances – that would otherwise be hazardous – to be handled, reducing the emission of dust that could be inhaled, swallowed or dispersed in the surrounding environment.

The specifications that characterize BMP® technology are the only ones that have been approved by the EU regulations and recognized as being useful to minimize the risks due to exposure for the workers. For this reason, BMP® technology has been adopted by leading manufacturers across the world, who have also recognized its validity as a protective measure to guarantee the safety of their operators and operators on the supply chain.





### **BENEFITS FOR THE NUTRITIONIST**

Used to reach predetermined objectives in terms of guaranteed optimum intakes reducing risks for overdoses or under dosage.



### **BENEFITS FOR THE FEED**

Controlled particle size, not hydrophilic or lipophilic, no static electricity: optimum characteristics for high mixing efficiency.



### **BENEFITS FOR THE OPERATOR**

Sicurezza nella manipolazione: assenza di polveri fini inalabili inferiori a 50 micron.



### **BENEFITS FOR THE PLANTS**

Optimum flowability, no caking: it improves the stability of the premix and reduces the risk of cross-contamination.



### **BENEFITS FOR THE ANIMAL**

Accurate dosing of the active ingredients and certainty of their bioavailability in time.



### **BENEFITS FOR THE ENVIRONMENT**

No fine dust emissions during preparation or use. Marked reduction in environmental pollution.



### **BENEFITS FOR THE FARMER**

Guaranteed administration of proper doses of active principles, without any need for costly overdoses.

# Application: additives, premixtures, supplements

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BMP® micro granulate technology has been used by many multi-national manufacturers of medicated feeding stuffs additive and oligovitamin premix on an increasing number of:

- Antibiotics
- Coccidiostats
- Growth promoters
- Performance enhancers
- Vitamins
- Minerals
- Beta agonists
- Therapeutics



## WHY USE A BMP® PROTECTED PRODUCT

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### BECAUSE IT:

- ✓ Guarantees that the dosage established by the nutritionist is actually supplied to the animal;
- ✓ Ensures a homogeneous dispersion in the feed;
- ✓ Improves the yield of the feed through greater availability of the micro-ingredients for each animal, due to the optimal distribution of supplements in the mix;
- ✓ Drastically reduces the risk of cross-contamination;
- ✓ Reduces the risk of residues in the milk and meat;
- ✓ Drastically reduces the emission of respirable dust and, consequently, it:
  - ✧ Safeguards the health of the operators (chemical risk).
  - ✧ Helps to safeguard the environment.
- ✓ Reduces the risk of the employer's potential liability for safety at the workplace.



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