

# BREAK-THRU® for seed treatment formulations

Multifunctional carrier fluid  
with binder properties

DISPERSANTS | WETTING AGENTS  
MICROPLASTIC FREE BINDER



## BREAK-THRU® BP 787 IS A WATER FREE MULTIFUNCTIONAL CARRIER FLUID WITH BINDER FUNCTIONALITY

Multiple benefits for seed applied formulations

### Sustainable solution

Microplastic free, biodegradable\*\*,  
no tox labelling

### Customized formulations

Mixable with Evonik BREAK-THRU®  
and Silica products to achieve low rub-off,  
good flowability and coverage

### Enhanced shelf life of microbials

Carrier fluid for living microbial actives\*  
for an enhanced shelf life within the  
formulation and applied on seed



### Binder functionality with excellent dust reduction

No additional binder is needed

### Enabling hybrid solutions

Combination of microbials with chemicals  
and/or micronutrients

### Improved biological efficacy

Accelerated seed germination possible

### Convenient and patented solution

Easy handling and low complexity  
(compatible with water-based products)  
Patented Evonik solution

\* Proven for *Trichoderma harzianum* and *Chlonostachys rosea*  
\*\* OECD 301F

# BIOLOGICAL SEED TREATMENT

## BREAK-THRU® BP 787 FOR LIQUID, MICROBE BASED SEED FORMULATIONS

Multifunctional carrier fluid for microplastic free seed treatment

Guideline Formulation	Function	Share
<i>Trichoderma harzianum</i> spores 25% on silica	Fungal active	20%
BREAK-THRU® DA 647	Dispersant	5%
BREAK-THRU® S 301	Superspreader	3%
Agrocerved 112	Pigment	2%
<b>BREAK-THRU® BP 787</b>	Multifunctional carrier fluid with binder properties	70%

### Guideline formulation characteristics

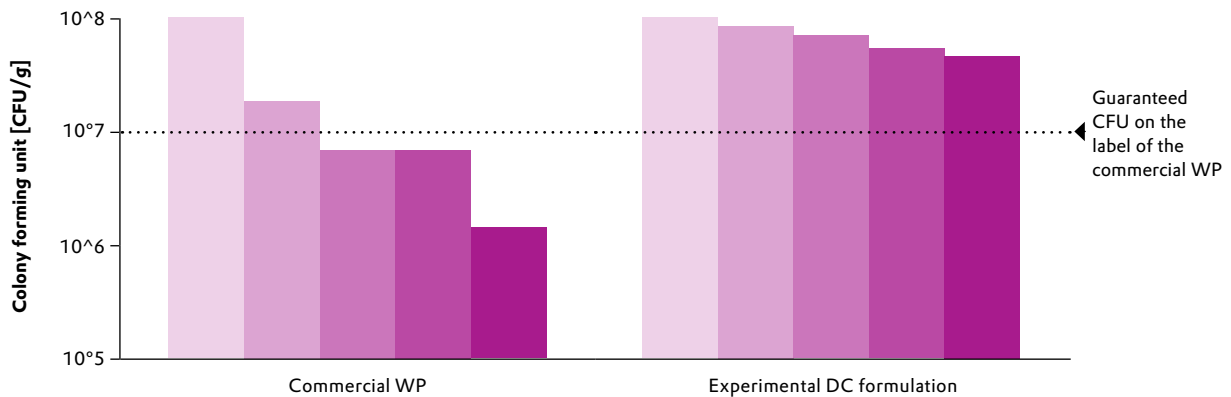
- Storage stable (No syneresis after 4 weeks 40°C (accelerated storage test))
- Excellent impact of additional adjuvants: low rub-off, good flowability and coverage
- Easily dispersible in water
- **BREAK-THRU® BP 787 in combination with silica is the binder solution**



## THE SHELF LIFE OF TRICHODERMA HARZIANUM SPORES IS SIGNIFICANTLY ENHANCED IN A DC FORMULATION BASED ON BREAK-THRU® BP 787

### Accelerated Storage Test

Survival rate of *Trichoderma harzianum* in a commercial WP in comparison to an experimental DC formulation @ 40°C



Start
  1 week
  2 weeks
  3 weeks
  4 weeks  
 CFU = colony forming unit, Triple determination  
 Starting value normalized to 10<sup>8</sup>

Experimental DC formulation	Share
<i>Trichoderma harzianum</i> spores 25% on silica	20%
<b>BREAK-THRU® BP 787</b>	80%

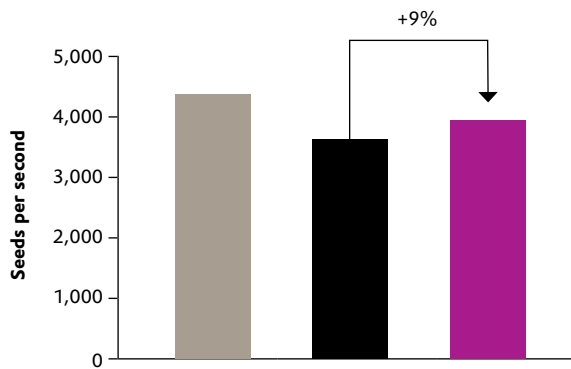
# CHEMICAL SEED TREATMENT

Guideline Formulation	Function	Share
Fludioxonil	Fungicidal active	2.4%
Difenoconazole	Fungicidal active	1.9%
Tebuconazole	Fungicidal active	0.5%
BREAK-THRU® DA 647	Dispersing agent	3%
BREAK-THRU® S 301	Superspreader	3%
Propylene glycol	Compatibilizer	2.5%
Xanthan gum	Viscosity improver	0.3%
Agrocerved 112	Pigment	4%
BREAK-THRU® BP 787	Multifunctional carrier fluid with binder properties	10%
AEROSIL® 200	Rheology modifier	2.5%
Water to		100%

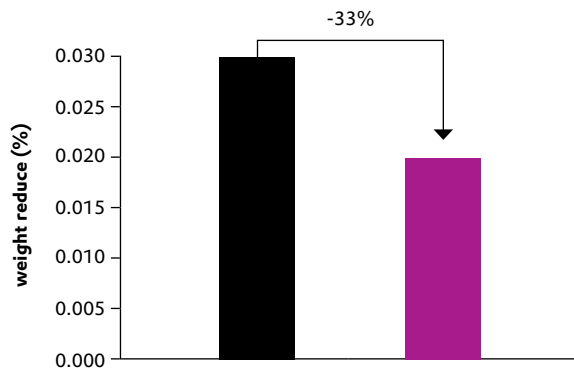
Binder solution

## BREAK-THRU® BP 787 AS A BINDER IN A FS FORMULATION LEADS TO ENHANCED PHYSICAL PARAMETERS OF WHEAT SEEDS COMPARED TO COMMERCIAL TREATMENT

Higher flowability rates\*

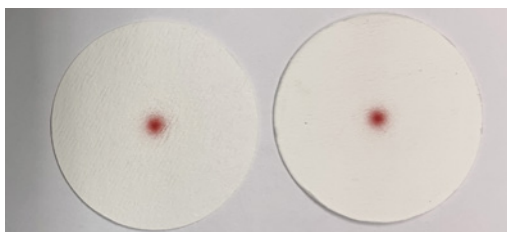


Lower dry friability\*

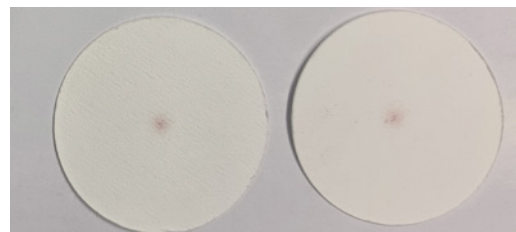


untreated check  
  Commercial Benchmark  
  Guideline formulation  
 pressure 4 bar | Total weight 600 g | Flow duration 0.5 sec    \*Results obtained from Innoveins | NL

Non measurable dust-off\*



Commercial benchmark



Guideline formulation

## BREAK-THRU® PRODUCT PORTFOLIO FOR SEED TREATMENT

For better physical and biological performance of seed treatment formulations

Product portfolio	Performance
BREAK-THRU® BP 787	<ul style="list-style-type: none"> <li>extended shelf-life of microorganisms</li> <li>excellent binder properties in combination with AEROSIL® 200 with extremely low dust-off values, good adherence, and homogeneous coating</li> <li>improved germination and performance</li> </ul>
BREAK-THRU® S 301	<ul style="list-style-type: none"> <li>significant increase in flowability</li> <li>good adherence</li> <li>very good homogeneous coating</li> <li>no impact on the germination rate</li> </ul>
BREAK-THRU® SP 133	<ul style="list-style-type: none"> <li>optimized adherence and flowability</li> <li>especially for formulations containing biological (spores)</li> <li>no impact on the germination rate</li> </ul>
BREAK-THRU® DA 646 / BREAK-THRU® DA 647	<ul style="list-style-type: none"> <li>optimized adherence and flowability</li> <li>excellent dispersion of chemical and biological actives</li> <li>reduction of active agglomeration</li> <li>no impact on the germination rate</li> </ul>
BREAK-THRU® OE 446	<ul style="list-style-type: none"> <li>optimized flowability and dust-off values</li> <li>no impact on the germination rate</li> </ul>

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Evonik Operations GmbH  
 Goldschmidtstraße 100  
 45127 Essen  
 Germany  
 Phone +49 201 173-2665  
 Fax +49 201 173-1990  
 www.evonik.com

