

# Technical Data Sheet



## Mycoforti® Artisan, Classic, Intense and Mild *Penicillium roqueforti*\*

### Product Information

Mould culture for Blue Cheese

<b>Description</b>	Myconeos patent-protected liquid mould culture consisting of a single strain spore suspension of <i>Penicillium roqueforti</i> .			
		Specification		Method of Analysis
	Cell count	>2.0 x 10 <sup>9</sup> CFU per dose		ISO611/IDF94
	Dosage	1 dose 10ml per 1000l of milk		
<b>Origin</b>	This strain of <i>Penicillium roqueforti</i> is the result of the application of a natural revolutionary strain development technique within blue mould cultures. It has been selected following extensive evaluation with cheese manufacturers to ensure performance.			
	The selected strains origins are:			
	Strain	Novel strain bred from selected strains with origin in traditional cheese making.		Novel strains bred from the wild with proven performance in cheese making.
	Artisan			X
	Classic			X
	Intense		X	
Mild		X		
<b>Composition</b>	Single strain of <i>Penicillium roqueforti</i> .			
<b>Technical data</b>	Physical Properties	Spore Colour	Flavour	Texture
	Artisan	Blue-green	aromatic, medium flavour/ tangy and nutty	Creamy
	Classic	Blue-green	robust and tangy/ medium flavour/ sweet and nutty	Creamy
	Intense	Blue-green	strong and salty in flavour	Firm & creamy

\* This product is protected by the following patent application **GB1905360.2**.

**Version 4.0 UK 12 2022**

The information contained in this specification is based on our own research and development work and is to the best of our knowledge reliable. However, users should conduct their own tests to determine suitability of our strains. Statements contained herein should not be considered as a warranty of any kind.

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	Mild	Blue-green	mild, well rounded/ hint of sweetness	Balanced & creamy	
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*Penicillium roqueforti* is an essential ingredient in the production of mould ripened blue cheeses where it contributes in the following ways:

- The characteristic appearance of the cheese.
- The characteristic unique flavour of blue cheese (lipolysis).
- The loose and soft texture of the cheese through softening (proteolysis).

## Enzymatic Activity

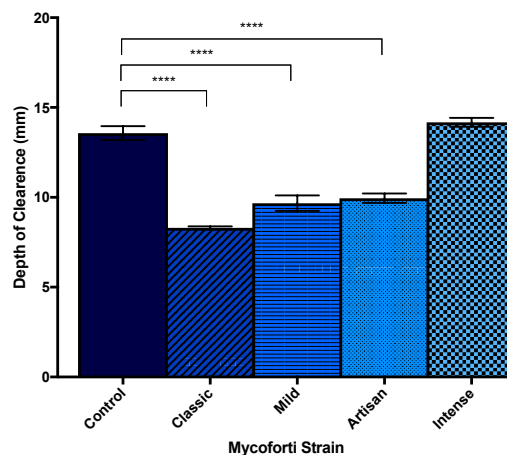
Enzyme Activity	Proteolytic Activity**	Lipolytic Activity***	Growth Rate
Artisan	Low	Medium/Low	Medium/Low
Classic	Medium/High	Low	Medium/High
Intense	High	Medium/High	Medium/Low
Mild	Medium/Low	Medium/Low	High

Proteolytic activity\*\* - Low defined as below 25% percentile. Med/Low up to median. Med/high up to 75% percentile. High above 75% percentile.

Lipolytic activity\*\*\* - Low defined as below 25% percentile. Med/Low up to median. Med/high up to 75% percentile. High above 75% percentile.

## Lipolytic Activity

Depth of clearance on tributyrin media measured after 4 days of growth (mm)



**Figure 1** - Lipolytic activity of Mycoforti strains. Statistical analysis performed using a One-Way ANOVA with a Dunnett's multiple comparisons test: \*\*\*\* =  $p < 0.0001$ .

Inoculation level	$1 \times 10^6$ spores (point inoculum)
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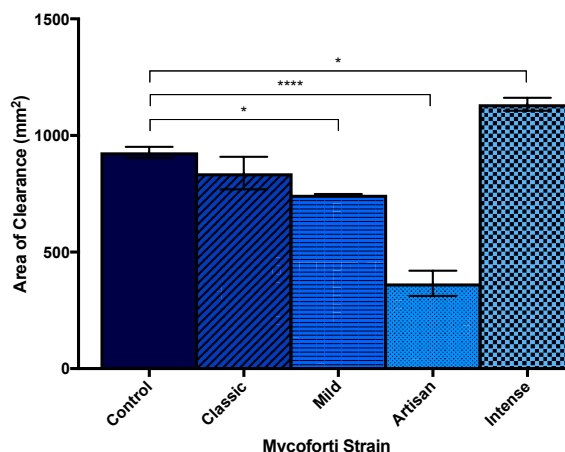
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Substrate	Tributyryn
Temperature	12 °C

## Proteolytic Activity

Area of clearance on milk casein media measured after 10 days of growth (mm<sup>2</sup>)



**Figure 2** – Proteolytic activity of Mycoforti strains. Statistical analysis performed using a One-Way ANOVA with a Dunnett’s multiple comparisons test: \* = p<0.05; \*\*\*\* = p<0.0001.

Inoculation level	1 x 10 <sup>6</sup> spores (point inoculum)
Substrate	Milk Casein
Temperature	12 °C

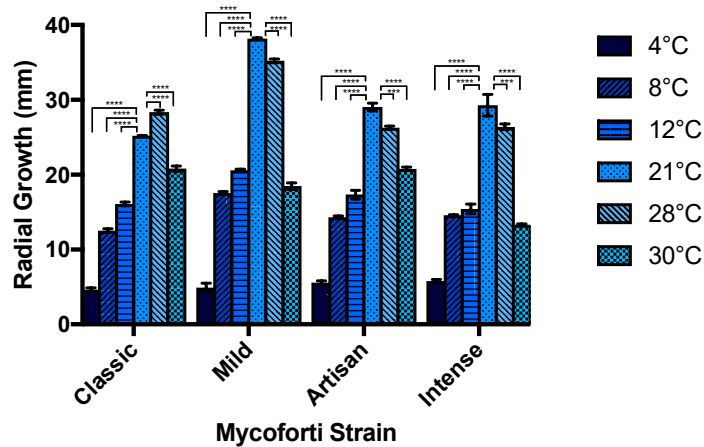
## Physiological Features

Temperature	Growth range 4 – 30 °C. Maximum growth between 21-28 °C,
pH	No inhibition in cheese conditions
Salt (NaCl)	No inhibition in cheese conditions

## Influence of Temperature

Radial growth after 7 days (mm)

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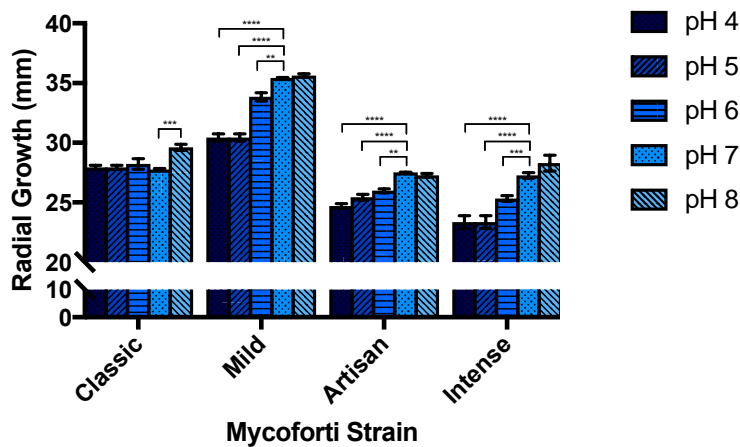


**Figure 3** – Temperature effect on total radial growth of Mycoforti strains after 7 days. Statistical analysis performed using a Two-Way ANOVA with a Dunnett’s multiple comparisons test using 21 °C as a control: \*\*\* = p<0.001; \*\*\*\* = p<0.0001 (n=3).

Inoculation level	5 x 10 <sup>5</sup> spores (point inoculum)
Substrate	PDA

## Influence of pH

Radial growth after 7 days (mm)



**Figure 4** - pH effect on total radial growth of Mycoforti strains after 7 days. Statistical analysis performed using a Two-Way ANOVA with a Dunnett’s multiple comparisons test using pH 7 as a control: \*\* = p<0.01; \*\*\* = p<0.001; \*\*\*\* = p<0.0001 (n=3).

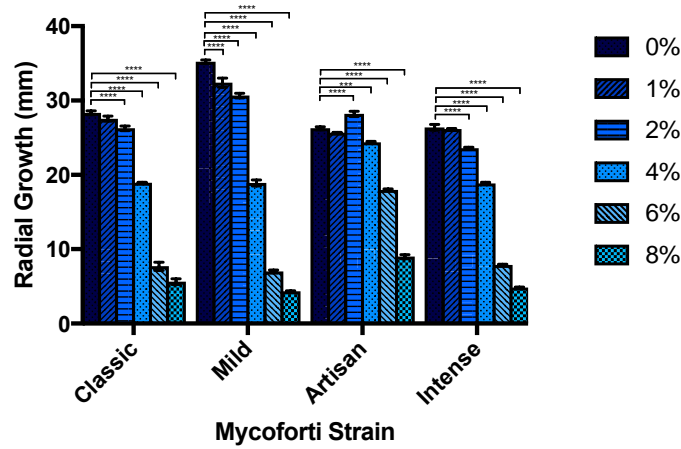
Inoculation level	5 x 10 <sup>5</sup> spores (point inoculum)
Substrate	PDA
Temperature	28 °C

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## Influence of Salt

Radial growth after 7 days (mm)



**Figure 5** – Salt (NaCl) concentration effect on total radial growth of Mycoforti strains after 7 days. Statistical analysis performed using a Two-Way ANOVA with a Dunnett’s multiple comparisons test using 0% as a control: \*\*\* =  $p < 0.001$ ; \*\*\*\* =  $p < 0.0001$  (n=3).

Inoculation level	$5 \times 10^5$ spores (point inoculum)
Substrate	PDA
Temperature	28 °C

## Microbiological Specifications

Microbiological quality control- standard values and methods

	Specification	Method of Analysis
Cell count	$>2.0 \times 10^9$ cfu/dose	ISO611/IDF94
Enterobacteria	$<10$ cfu/ml	ISO21528-2
Staphylococci coagulase positive	$<1$ cfu/ml	ISO6888-1-2
Anaerobic sulphite reducing spores	$<10$ cfu/ml	V08-061
Foreign yeast	$<1$ cfu/dose	Myconeos Internal SOP2
Unwanted moulds	$<1$ cfu/dose	Myconeos Internal SOP2
Salmonella	None detected	ISO6785/IDF93

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Listeria monocytogenes	None detected	ISO11290-1-2
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## Allergens

All materials are free of the following components and their derivatives, peanut, tree nut, egg, fish, shellfish, crustacean, sulphites, celery, mustard, sesame seeds, soyabeans and lupine.

## Range

Name	Form	Unit	No Units/ Box
Artisan	Liquid spore suspension	50ml	tbc
Classic	Liquid spore suspension	50ml	tbc
Intense	Liquid spore suspension	50ml	tbc
Mild	Liquid spore suspension	50ml	tbc

The Mycoforti<sup>®</sup> *Penicillium roqueforti* strain range is Kosher Certified. Certificate available on request.

## Storage

The Mycoforti<sup>®</sup> Artisan, Classic, Intense and Mild *Penicillium roqueforti* strains can be used up to:

- 6 months from shipment date when stored in the fridge below 5°C

Expiry Date: see label

## Application

The Mycoforti<sup>®</sup> Artisan, Classic, Intense and Mild *Penicillium roqueforti* strains can be used for Roqueforti, Danish Blue, Stilton and all other types of blue cheese.

## Complies with all EU food legislations

Manufactured in a SALSA certified Facility.

## GMO Status

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The Mycoforti<sup>®</sup> range are produced by non-GMO methods They do not consist of, nor contain nor are produced from genetically modified organisms according to the definitions of Regulation (EC) 1829/2003 and Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22<sup>nd</sup> September 2003. For raw materials having the potential of being produced from genetically modified organisms, we have obtained written information from our suppliers stating that the raw material is not produced from genetically modified organisms according to the definitions of the above-mentioned EC Regulations.

**Other:** The Mycoforti<sup>®</sup> range are gluten free

## **Manufacture Origin**

Produced in the United Kingdom

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