

Britase PAL Mix **Britase PALMC Mix** Liquid enzyme mixes for laundry detergents

Product information

Britase PAL Mix and Britase PALMC Mix are liquid enzyme mixes specially designed to improve the performance of laundry detergents at low washing temperatures.

Britase PAL Mix contains the following enzymes-types: **protease, amylase and lipase.**

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Enzymes increases the performance on a broadscale of organic stains, specifically related to the substrate of each enzyme-type. As common stains we experience in our daily life are frequently made up from different ingredients (read substrates) the use of a complex enzyme system will have a synergetic effect of these stains.

Proteases hydrolyze proteins into smaller molecules such as amino acids and poly peptides. Proteins can be found as example in grass, blood, egg (yolk), milk, gravy and perspiration.

Amylases breaks down both the amylose and the amylopectin part of starch.

Amylopectins are not water soluble and therefore difficult to remove from an attached surface like fabrics. Amylopectins act as a glue.

Starches are one of the major components of our daily food.

Examples include corn, potatoes, wheat, and rice. These starches and modified starches are used in processed food such as gravy, baby food, porridges, pasta, pudding and sauces.

Lipases break down the triglycerides in edible oils and fats, which are found in greasy foods and many cosmetic products. The triglycerides are broken down to fatty acids, diglycerides and monoglycerides, which are more soluble in wash water and therefore more efficiently removed from the textile. Lipid stains are especially cumbersome for Cotton fabric as they tend to move by capillary force into the inner cavity of cotton. Surfactants will not be able to remove this.

Mannanases degrade galactomannan, Galactomannans or, in short, mannans are polysaccharides, extensively used in the food and personal care industry. Well known galactomannans are Guar gum and Locus bean gums, which are used as thickener in food, personal care and cosmetics. These Mannans are colorless by nature, they create visible and invisible stains. Mannans act as glue for other stains and particles and therefore contribute to overall greying and dulling of fabrics.

Cellulases prevent fuzz and pilling on cotton fabrics. Fuzz and pills formations are nr.1 consumer pains when it comes to attempts to maintain their new garments. Fuzz and pills give the fabric a worn-out appearance, the colours will appear less bright as before and the fuzz and pills can “trap” particulate soil parts which give light coloured items a more greyish appearance. Cellulases contribute in colour maintenance by anti-greying / anti redeposition effects of textiles. Cellulases can also have a cleaning effect on some fibre containing (beta-glucans) stains like those of cereals and oat meals.

Product specifications

Description:	amber coloured liquid enzymes mix	
Enzyme activity:	PAL Mix	PALMC Mix
protease	30 - 50 U/g	40 - 60 PU/g
amylase	8.000 - 10.000 U/g	10.000 - 13.000 AU/g
lipase	3.000 - 5.000 U/g	2.000 - 3.000 LU/g
mannanase	-	positive
cellulase	-	50 - 70 CU/g
Physical/chemical:	appearance light amber liquid	
Composition:	propane-1,2,3-triol	30 - 50%
	water	30 - 50%
Microbiological:	total viable count	0 - 50.000 CFU/g
	Production strain	NEGATIVE
Storage conditions:	keep packaging intact, cool, dry, away from sunlight	
	Shelf life	1 year 2 years in closed packing at 15°C
Manufacturing certifications:	ISO 9001:2015 ISO 22000:2018 Halal	
Safety and enzyme handling:	Inhalation of enzyme dust, mists should be avoided. In case of contact with the skin or eyes, promptly rinse with water for at least 15 minutes. For detailed handling information, please refer to the appropriate Material Safety Data Sheet.	

Technical

Figure 1: Example of a wash trail at 40°C, 8dH with EMPA 117 Detergent without Protease (left) and Detergent plus increasing amount of Protease (as of 2nd from the left to the right)

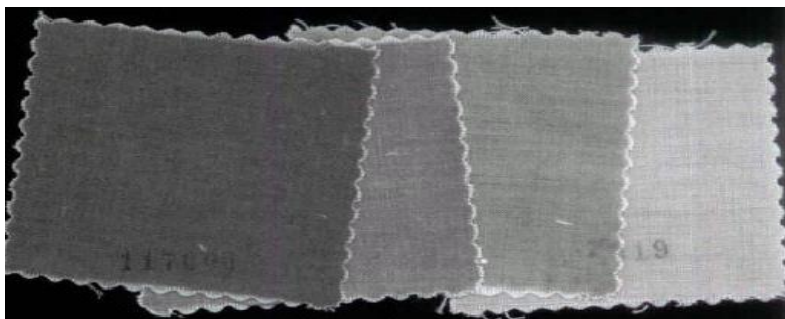


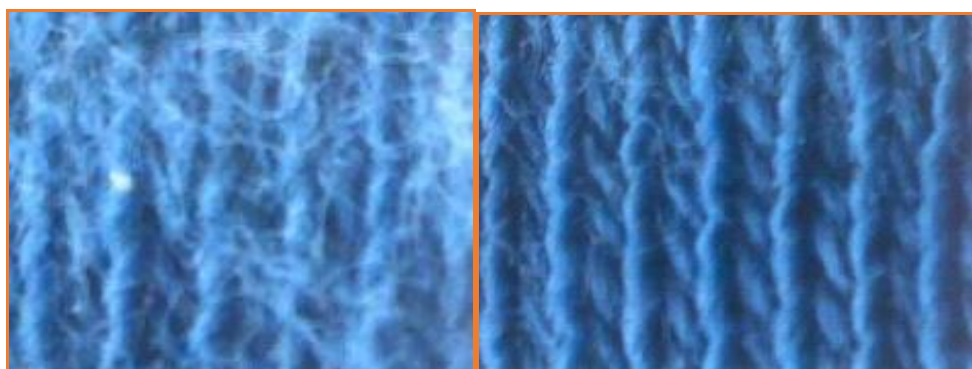
Figure 2: Example of a wash trail at 40°C, 8dH with EMPA 112 Detergent without Amylase (left) and Detergent plus increasing amount of Amylase (as of 2nd from the left to the right)

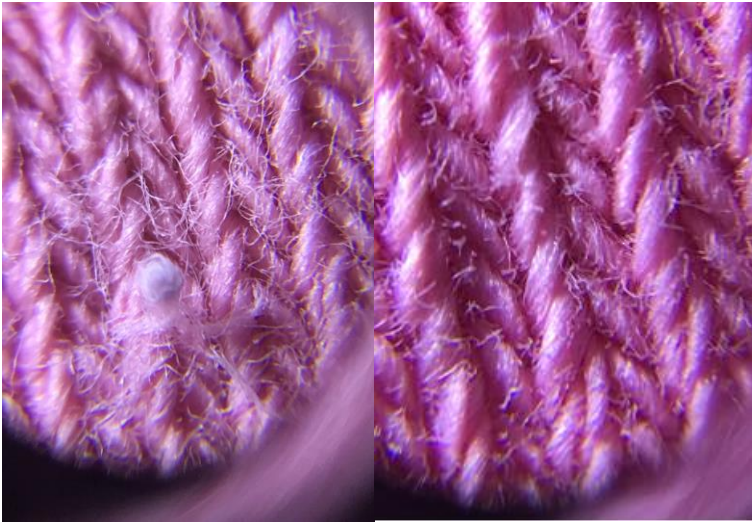


Figure 3: Example of a wash trail at 40°C, 8dH with an Olive Oil Stain. Detergent without a Lipase (left) and Detergent plus a Lipase (right)



Figure 4 & 5) example of pilling prevention of cellulase after 10 x washes. Left detergent without cellulase, right detergent with cellulases. Figure 5 shows a clear pill





Non-GMO Declaration

Britase PAL Mix does not contain GMO products and itself is Non-GMO. The organisms producing Britase PAL Mix are selected from nature and bred by selecting the strongest strains.

Commercial

The product is available in 25kg HDPE drums
The packing can also be customized as per requirements.

Classification according to Regulation (EC) No 1272/2008

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