

CALCIUM PROPIONATE(CH₃CH₂COO)₂Ca PROBAKE®

PROBAKE® is available as a white agglomerate. The agglomerate has certain advantages over powders as it offers the properties of non-dustiness with improved wettability, higher bulk density and improved flowability.

COMMERCIAL INFORMATION**Specifications**

Grade		Food
Appearance		agglomerate
Assay on dried material as Calcium Propionate	% mass min.	99
Water	% mass max.	4
Insoluble in water	% mass max.	0.05
Chloride (Cl)	% mass max.	0.05
Sulphate (SO ₄)	% mass max.	0.05
Fluoride (F)	% mass max.	0.003
Iron (Fe)	ppm max.	10
Lead (Pb)	ppm max.	2
Arsenic (As)	ppm max.	2
Magnesium (Mg)	% mass max (as MgO)	0.4
pH (1% solution)		

Conforms to: FCC5
the criteria of purity of the EC (specified for E282)
FAO/WHO specifications for identity and purity of food additives
Japanese standards of food additives

Methods of analysis

Details of test methods can be supplied on request.

Packing

PROBAKE® is supplied in polyethylene lined paper bags or big bags

Storage and handling

The product should be stored and handled in its original packaging or in a suitable sealed container and kept in a clean and dry place. Storage conditions should preferably be a sheltered environment with limited temperature variations and low humidity levels.

Direct contact of the package with water or any other liquid is likely to cause the product to cake. Pallets should not be stacked. Under normal conditions, the use of this product does not cause any undue health hazard. Precautions should be taken to prevent eye- and prolonged or repeated skin contact with the solid product or its solutions.

First aid

Eye contact: In the event of eye contact occurring, immediately irrigate with copious quantities of clean water, holding the eye open if necessary. Obtain medical attention.

Skin contact: Wash with water. Remove contaminated clothing, which should be washed before re-use. Ingestion: Wash out mouth with water. Obtain medical attention.

Fire hazard

PROBAKE® presents little fire hazard.

Applications

Preservation of bread

PROBAKE[®] is an effective inhibitor of the growth of certain moulds and some bacteria. It is widely employed in bread to prevent mould and extend the normal shelf life of the product. It is easy to handle and easy to incorporate into flour.

The need for preservatives

High moisture content of bread encourages the growth of moulds. Moulds are killed during the baking process, but airborne contamination of the bread occurs when it leaves the oven and mould spores are subsequently picked up from the atmosphere, during and after cooling, and from equipment. Although strict attention to bakery hygiene can greatly reduce contamination, it is not completely eliminated. The use of a preservative is therefore beneficial in extending the mould-free shelf life of the product. The rate of mould growth on bread is affected by the number and type of spores present. It is accelerated by high storage temperatures and humidity and is also influenced by the recipe employed. Wrapped sliced bread is particularly susceptible to mould.

Methods of use

Since there are many factors affecting the mould growth rate on bread, the levels of used PROBAKE[®] cannot be correlated precisely with the extension of the shelf life.

In general, however, for standard bread recipes, a concentration of 0.2-0.5% PROBAKE[®] on the mass of flour is recommended. Although the odour of PROBAKE[®] at this concentration may be noticed when the bread is still hot, it rapidly disappears during cooling.

At the start of dough making PROBAKE[®] should be added to the other dry ingredients of the loaf. A small reduction in volume of the finished loaf may result from the use of PROBAKE[®] but this can usually be overcome by the addition of some extra yeast. PROBAKE[®] can also be added at the end of the dough making.

In all cases it is advisable to carry out an initial baking test, so that the precise effects on odour, flavour and bread volume can be determined. When adding PROBAKE[®] to the bread, the rope bacillus is effectively controlled at the same time.

Other applications

PROBAKE[®] can be used for prevention of microbial deterioration of products other than foodstuffs. It has advantages over other fungicides in being of low toxicity and of relatively low cost. It has been proven to be of value in pharmaceutical preparations used for the treatment of athletes' foot and rashes.

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PROPERTIES

Physical properties

Molecular mass		186.22
Flash point	°C	> 250
Solubility in water: at	0°C	g/100 ml
	: at 25°C	42.8
	: at 30°C	39.9
	: at 60°C	39.1
	: at 80°C	38.3
	: at 100°C	39.9
		48.4

Physiological properties

The solid or solutions may cause irritation to the eyes. Prolonged or repeated skin contact may cause slight irritation. Exposure to the dust at high concentrations or ingestion may cause irritation to the nose, throat and upper respiratory tract.

LIABILITY

Information contained in this publication is accurate to the best of the knowledge of Kemira ChemSolution b.v. The Company does not accept any liability whatsoever in respect of the use of this information nor in respect of the use, application, adaptation or processing of any product(s) described herein.

CERTIFICATION

Kemira ChemSolutions b.v. has an ongoing quality system certified according ISO 9001:2000

December 2005

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