



A taste of *Radiumuls*[®] cake solutions

RADIAMULS
TRADEMARK OF OLEON

A cake batter is made from flour, sugar, eggs and fat and is a complex aerated emulsion of a fat phase in an aqueous phase. In high fat batters, the emulsion is aerated by the inclusion of air into the fat phase which in turn is dispersed in the water phase. When the batter temperature rises during baking, the fat phase melts and the air migrates into the water phase. In low/no fat batters like sponge cakes the air is incorporated directly into the aqueous phase at the mixing stage.

OUR SOLUTIONS

BATTER DENSITY

Generating a lower density by incorporating air

Radiumuls Poly 2249K
Radiumuls Poly 2247K

VOLUME

Entrapping air in the structure will increase the volume

Radiumuls MG 2910K
Radiumuls Poly 2247K
Radiumuls PG 2202K

WEIGHT

Water retention will reduce weight loss

Radiumuls PG 2202K

EMULSIFIER FUNCTIONALITY

Emulsifiers used in cakes **reduce surface tensions** between the water and fat phases of the batter by bonding to both of them. This allows better fat distribution in the water phase and promotes the incorporation of air at mixing. Furthermore, emulsifiers help to make cakes with a **uniform and thin-walled crumb structure** and good cutting properties. The last two options are mainly of importance for the optimal performance of the PGE. Finally, by complexing starch, emulsifiers also **retard cake staling**.

GAS CELL SIZE

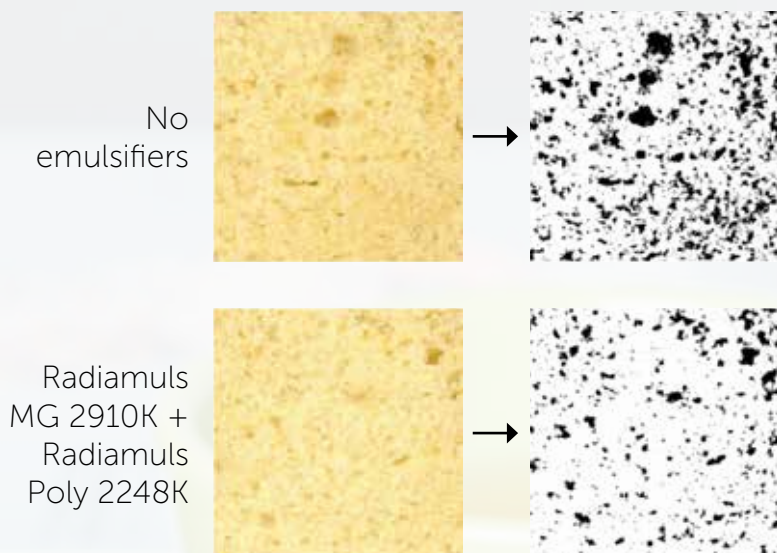
Uniform gas cell size structure to provide the right crumb structure

Radiumuls MG 2910K
Radiumuls Poly 2247K
Radiumuls PG 2202K

CRUMB HARDNESS

Reducing staling effect and increasing shelf life

Radiumuls MG 2910K
Radiumuls MG 2903K



— RECIPE —

Flour	35%
Sugars	30%
Eggs	18%
Oil	11%
Water	5,25%
Emulsifier	0,75%



Typical recipe for sponge cake

Emulsifiers can be added to the formulation in various ways: cold-dispersible powders, molten in the fat phase, pre-hydrated gels or extruded powders. The last two options are mainly of importance for the optimal performance of the PGE.

	PACKAGING	SHELF LIFE
Radiumuls MG 2910K mono- and diglycerides	25kg bag	24 months
Radiumuls MG 2903K mono- and diglycerides	20kg bag in box	18 months
Radiumuls Poly 2249K polyglycerol ester (PGE)	24kg jerrycan	12 months
Radiumuls PG 2202K propylene glycol mono ester (PGMS)	20kg bag in box	24 months
Radiumuls Poly 2247K polyglycerol ester (PGE)	20kg bag in box	24 months

oleon
a natural chemistry

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NUTRITION