



# Oral Care

Natural Minerals for  
Toothpaste Formulations



THINKING OF TOMORROW



## About Omya

Omya is a leading global producer of Calcium Carbonate and a world-wide distributor of specialty chemicals. With more than 130 years of experience and 175 plants in over 50 countries, Omya is a leader in research and development, innovation and support.

## Oral Care

Excellent cleaning performance, remineralization and whitening for toothpaste

After many years of research, our expertise in dental care meets manufacturers' expectations based on consumer needs for dental care formulations.

The focus of toothpaste formulators continues to be on "all-in-one"/"total care" products comprising cavity protection, prevention of gingivitis and plaque, extra fresh breath, tartar control, tooth whitening properties, enamel strengthening and sensitivity relief.

In oral care, Omya minerals are known as multifunctional ingredients, providing enamel remineralization in addition to excellent cleansing.

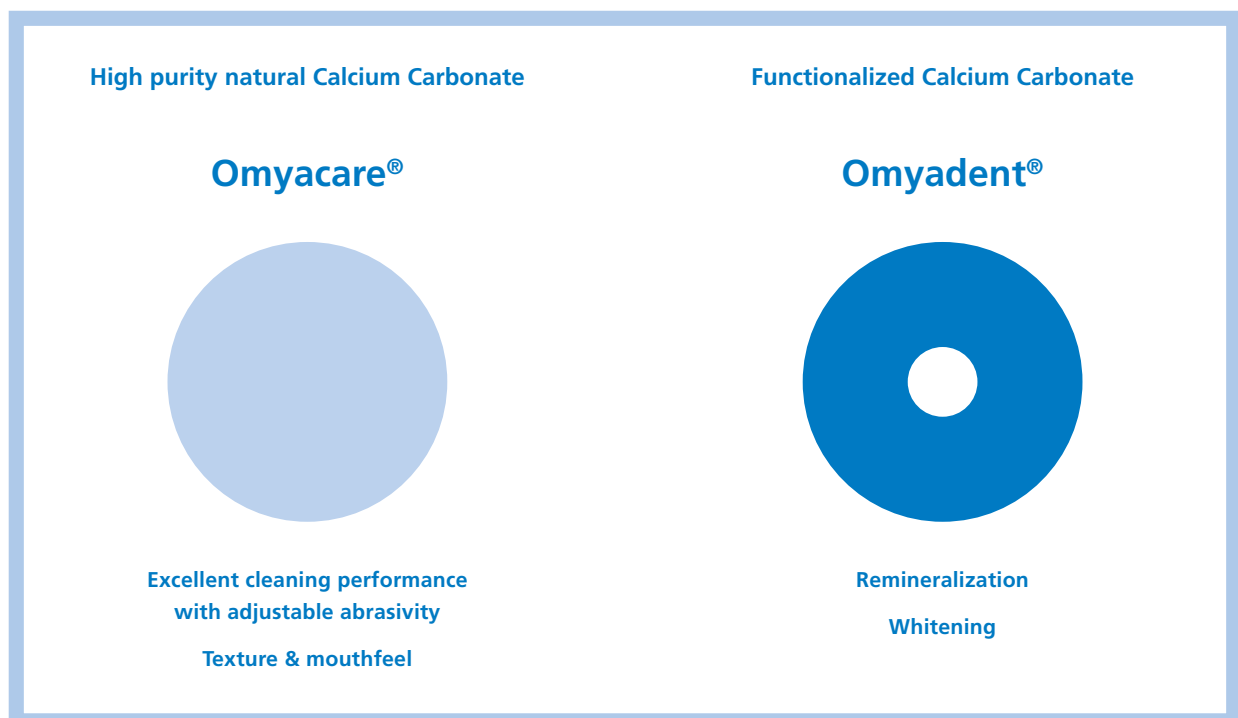
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### *Benefits*

- *Gentle cleansing*
- *Remineralization & repair*
- *Whiter teeth*



**Omya offers a wide portfolio of oral care ingredients, including two mineral product ranges:**





# Omyacare®

## Natural Calcium Carbonate with adjustable abrasivity levels

With Omyacare®, we offer a range of natural Calcium Carbonate with adjustable abrasivity levels, that suits the needs of modern toothpaste formulations, a pure and natural ingredient providing multifunctional benefits. Omyacare® is manufactured under clean and controlled production conditions which means a low carbon footprint.

### Excellent cleaning performance

The cleaning result is due to the use of abrasives in toothpaste compositions providing the polishing effect of surface. However, not all consumers need the same abrasiveness level.

For instance, low abrasion toothpaste would be recommended for children or sensitive teeth. Whereas a toothpaste with elevated abrasivity delivers enhanced stain removal and enables formulations with teeth whitening properties.

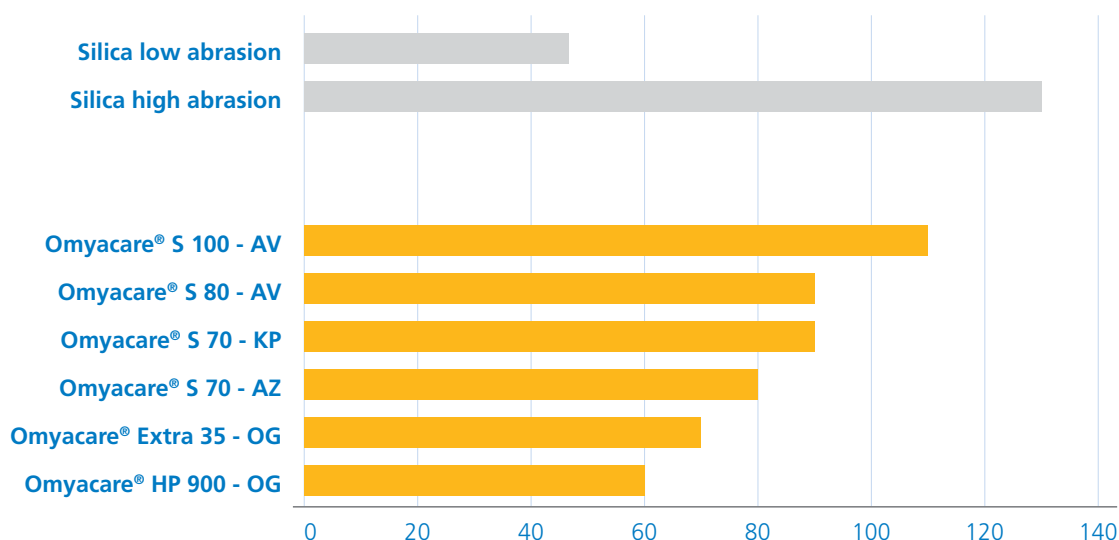
The variety of particle sizes within the Omyacare® product range and Omya's expert advice, guarantee the achievement of the exact desired abrasion level in the final formula.

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**Omyacare®**  
*meets the desired  
abrasivity level in  
your formulation*

## Technical facts

The abrasive activity of the Omyacare® range is compared to two silica grades commonly used in formulas. Omya can offer cleaning particles to formulate efficient toothpastes from low, over medium to high abrasion at very precise and achievable levels.



**Table 1:** Abrasion and cleaning performance depending on the selected Omyacare® grade.

Relative Dentin Abrasivity (RDA) is a method for measuring the abrasive action of a toothpaste on the tooth dentin. It is calculated by using standardized abrasives compared to the test sample and depends on the size, quantity and surface structure of abrasives used in toothpastes. The values have been obtained through Omya in-house technology that is available to customers in joint development projects.

## Texture & Mouthfeel

Mouthfeel is an important property and it is highly considered by consumers in the final formula.

Factors such as the concentration of the cleaning ingredient and particle size directly affect texture and mouthfeel. Omyacare®, at the recommended concentration and right combination of grades, is suitable for adjusting organoleptic properties such as texture, color, opacity and viscosity besides cleaning performance, in order to meet the customer's needs.

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*Omyacare® can adjust texture, color  
and cleaning performance in formulations*



## High purity and perfect performance

Omyacare® is chemically pure and has high microbiological quality. It complies with the most stringent quality requirements.

In addition, Omyacare® minerals are suitable for fluoridized toothpastes which, formulated at the right pH value, provide remineralization properties in the final product.

Calcium Carbonate provides remineralization and lasting protection, when formulated with sodium monofluorophosphate (SMFP), thanks to particles retained in plaque for neutralizing harmful acids.

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*Omyacare® is suitable for  
fluoridized toothpastes*



Gentle toothpaste containing **45% Omyacare® S 80 - AV**  
for smooth cleaning effect

	Ingredients	INCI Nomenclature	% w / w
<b>A</b>	Phoskudent NA 211	Sodium Monofluorophosphate	1.10
	Sodium Saccharin	Sodium Saccharin	0.20
	Sorbitol 70%	Sorbitol	22.00
	Aqua dem.	Aqua (Water)	add. 100
	Carrageenan	Carrageenan	0.80
	Sodium Benzoate	Sodium Benzoate	0.20
<b>B</b>	<b>Omyacare® S 80 - AV</b>	<b>Calcium Carbonate</b>	<b>45.00</b>
	Titanium Dioxide	Titanium Dioxide	0.50
<b>C</b>	Sorbosil TC15	Hydrated Silica	4.00
<b>D</b>	Galaxy 796G	Sodium Lauryl Sulfate	1.15
	Galaxy CAPB DC	Cocamidopropyl Betaine	1.25
<b>E</b>	Flavor	Aroma	q.s.

#### Procedure

- 1 Phase A: Into a beaker combine sorbitol with all powders and mix under strong agitation. Add water and stir to make a homogeneous texture.
- 2 Add part **B** step by step to part **A**.
- 3 Add part **C** step by step under strong agitation and homogenize.
- 4 Stir slowly and cool down to room temperature
- 5 Add part **D** under slow agitation, optionally under vacuum.
- 6 Finally add flavorings also under slow agitation.

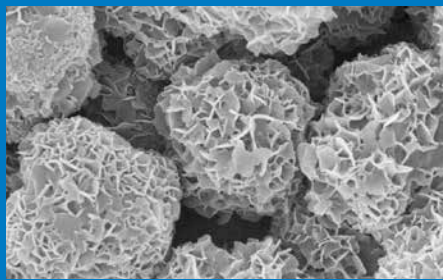


# Omyadent®

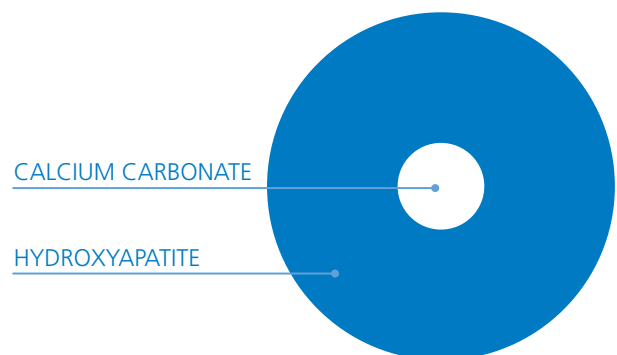
Large surface area which ensures high reactivity and excellent remineralization

Omyadent® particles have a core of Calcium Carbonate and a shell of hydroxyapatite, the main constituent of the enamel and dentin in our teeth. Omyadent®'s tailor-made particles have large surface areas which assure high reactivity and excellent remineralization.

Omyadent® is produced using Omya proprietary technology, in which the mineral is modified such that new surface features develop and particles become porous. This allows for a variety of products with a broad spectrum of properties, capabilities and applications.



*Omyadent® particles in Scanning Electron Microscopy (SEM) images. An increased surface area is shown.*







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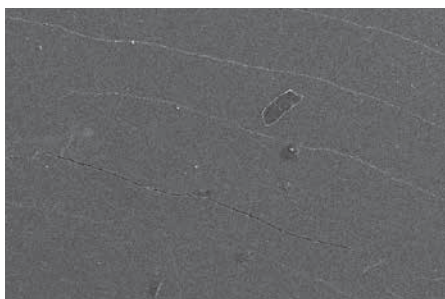
*Remineralize  
and repair  
for a whiter,  
healthier smile*

## Remineralization & Whitening

Omyadent® 100 - OG is a source of calcium and phosphate with a large surface area, ensuring high reactivity and efficient remineralization of the enamel by repairing microscopic defects. The result of applying Omyadent® 100 - OG is a smoother and whiter tooth surface.

## Remineralization & Whitening – Mechanism of action

Enamel surface lesions can be effectively repaired with Omyadent® 100 - OG. The large surface area of Omyadent® 100 - OG ensures high reactivity and efficient remineralization. As a result, Omyadent® 100 - OG improves tooth whiteness while smoothing the surface of the teeth.



*Before treatment*



*After treatment*

Bovine tooth enamel treated with Omyadent® 100 - OG and 1450 ppm of sodium monofluorophosphate, provide a smoother tooth surface as defects have been repaired by a remineralization process (Images 1000x).



## Gentle toothpaste containing **5% Omyadent® 100 - OG**

Omyadent® 100 - OG provides remineralization & whitening

	Ingredients	INCI Nomenclature	% w / w
<b>A</b>	Phoskudent Na211	Sodium Monofluorophosphate	1.10
	Sodium Saccharin	Sodium Saccharin	0.10
	Sorbitol 70%	Sorbitol	23.00
	Aqua dem.	Aqua (Water)	add. 100
	Cellulose Gum	Cellulose Gum	0.80
	Zemea Propanediol	Propanediol	10.00
	Glycerin	Glycerin	10.00
	Sodium Benzoate	Sodium Benzoate	0.10
	Natrii Phosphas	Trisodium Phosphate	1.00
	Sodium Hydroxide	Sodium Hydroxide	1.00
<b>B</b>	<b>Omyadent® 100 – OG</b>	<b>Hydroxyapatite (and) Calcium Carbonate</b>	<b>5.00</b>
	Sorbosil AC35	Hydrated Silica	20.00
<b>C</b>	Sorbosil TC15	Hydrated Silica	5.30
<b>D</b>	Galaxy 796G	Sodium Lauryl Sulfate	1.25
	Mint Aroma	Aroma	0.80
			<b>100.00</b>

### Procedure

- 1** Phase A: In a beaker combine sorbitol with all powders and mix under strong agitation. Add water and stir until a homogeneous texture is obtained.
- 2** Add part **B** step by step to part **A**.
- 3** Add part **C** step by step under strong agitation and homogenize.
- 4** Stir slowly and cool down to room temperature
- 5** Add part **D** under slow agitation, optionally under vacuum.
- 6** Finally add flavorings also under slow agitation.



## Product offering – Finding the right solution

Product	Material	RDA	Indicated for	Usage level (%)
<b>Omyacare® S 80 - AV</b>	Natural Calcium Carbonate	Medium - High	All-purpose formulas	30 – 45
<b>Omyacare® S 70 - KP</b> <b>Omyacare® S 70 - AZ</b>	Natural Calcium Carbonate	Medium - High	All-purpose formulas	30 – 45
<b>Omyacare® S 100 - AV</b>	Natural Calcium Carbonate	Medium	Whitening formulas	30 – 45
<b>Omyacare® S 90 - KP</b>	Natural Calcium Carbonate	Medium	Whitening formulas	30 – 45
<b>Omyacare® Extra 35 - OG</b>	Natural Calcium Carbonate	Medium	Sensitive teeth	30 – 45
<b>Omyacare® S 110 - KP</b>	Natural Calcium Carbonate	Medium	Sensitive teeth	30 – 45
<b>Omyacare® HP 900 - OG</b>	Natural Calcium Carbonate	Low	Sensitive teeth	30 – 45
<b>Omyacare® S 80 - AL *</b>	Natural Calcium Carbonate	Medium	Organic toothpastes	30 – 45
<b>Omyacare® S 90 - AL *</b>	Natural Calcium Carbonate	Low - Medium	Organic toothpastes	30 – 45
<b>Omyadent® 100 - OG **</b>	Funcionalized Calcium Carbonate	Non - Abrasive	Premium repairing formulas and whitening	5

\* COSMOS certified



\*\* COSMOS and NATRUE certified



## Omya Consumer Goods

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OMYA PIGMENTS**