Omya Calcipur®
Natural calcium carbonate
A versatile white pigment
Calcium carbonate is a natural ingredient for food applications and as E170 (synonym: CI pigment White 18, INS 170(i)) is known for its functionality as a colourant. Natural ground calcium carbonate is affirmed as GRAS (Generally Recognized As Safe) by the United States Food and Drug Administration. Thus, calcium carbonate is considered to be safe and can be used quantum satis, under conditions of good manufacturing practice. No ADI limitation (Acceptable Daily Intake) has been set for calcium carbonate 1),2).

Calcium carbonate acts both as a white pigment and as an opacifier; it also provides calcium as a nutrient. It contains up to 40% elemental calcium and is an excellent source of dietary calcium with good bioavailability. Calcium carbonate does not contribute to the calorific value of a food. Thus it is a bulking agent that can allow a reduction in calories 3).

Confectionary products contain high sugar contents. Calcium carbonate can be formulated into the sugar coating to reduce sugar and allow calorie reduction and it also provides whiteness, opacity and texture. In sugar-free coatings for chewing gum, calcium carbonate can be used to replace or act as an ideal optimizer for bulk sweeteners.

In an icing sugar, a replacement of 35% with calcium carbonate reduces calories from 310 to 174kcal 4).

For more detailed information on calcium carbonate as nutrient, please refer to our brochures „Calcium in Health“ and „Bioavailability“.
Tests & results

Incorporating 35% to 60% calcium carbonate in sugar-coatings is possible. This reduces the sugar content and allows for a significant calorie reduction. Omya Calcipur calcium carbonates are of excellent whiteness, non-hygroscopic and are ideal bulking agents. Tailored particle sizes allow high concentrations without impac-ting the mouth-feel of the final product.

Figure 1: Sugar coating without white pigment; 80% sugar
Figure 2: Sugar coating with 0.5% titanium dioxide
Figure 3: Sugar coating with 1% titanium dioxide
Figure 4: Sugar coating with 50% Omya Calcipur® 70-KP
Figure 5: Sugar coating with 35% Omya Calcipur® 110-KP
Figure 6: Sugar coating with 60% Omya Calcipur® 70-KP
Figure 7: Sugar coating with 50% Omya Calcipur® 110-KP
Figure 8: Sugar coating with 40% Omya Calcipur® 110-KP

References:
1. Regulation (EC) No. 1924/2006 of the European parliament and of the council on nutrition and health claims made on foods; December 2006
2. FDA; Guidance for Industry: A Food Labeling Guide; 10. Appendix B: Additional Requirements for Nutrient Content Claims; October 2009
3. Gurr M.; Calcium in Nutrition, International Life Sciences Institute Europe Concise Monograph Series, 1999
Natural products for Sustainability

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