



Amy Mozingo
GRAS Associates, LLC
11810 Grand Park Ave, Suite 500
North Bethesda, MD 20852

Re: GRAS Notice No. GRN 001211

Dear Ms. Mozingo:

The Food and Drug Administration (FDA, we) completed our evaluation of GRN 001211. We received the notice that you submitted on behalf of Crossway Foods Limited (Crossway) on September 19, 2024, and filed it on October 21, 2024. Crossway submitted amendments on January 13, 2025, and January 28, 2025, that clarified the specifications, dietary exposure, and aspects of the safety narrative.

The subject of the notice is reduced minerals goat whey (RMGW) for use as a source of protein and other nutrients in goat milk-based, non-exempt infant formula for term infants at a use level up to 40% by dry weight of the finished product.¹ The notice informs us of Crossway's view that this use of RMGW is GRAS through scientific procedures.

Our use of the term, "RMGW," in this letter is not our recommendation of that term as an appropriate common or usual name for declaring the substance in accordance with FDA's labeling requirements. Under 21 CFR 101.4, each ingredient must be declared by its common or usual name. In addition, 21 CFR 102.5 outlines general principles to use when establishing common or usual names for nonstandardized foods. Issues associated with labeling and the common or usual name of a food ingredient are under the purview of the Office of Nutrition and Food Labeling (ONFL) in the Nutrition Center of Excellence (NCE). The Office of Pre-Market Additive Safety (OPMAS) did not consult with ONFL regarding the appropriate common or usual name for "RMGW."

Crossway describes the identity and composition of RMGW as a yellowish powder obtained from pasteurized sweet goat cheese whey and processed to reduce the mineral content by 90%. Crossway describes the average proximate composition of RMGW to include carbohydrates, protein, moisture, fat, and ash. In addition, Crossway provides the typical composition of vitamins, minerals, and the amino acid profile of RWGM.

¹ Crossway states that RMGW is not intended for use in hypoallergenic infant formula or for infants with cow milk protein allergy.

Crossway describes the manufacturing process for RMGW. The process starts with sweet goat cheese whey that is pasteurized and processed to remove mineral salts. Electrodialysis and ion-exchange chromatography are used to remove approximately 90% of the minerals; the resulting demineralized whey is concentrated by evaporation and then cooled to facilitate crystal formation. The crystallized product is spray-dried to obtain the final RMGW product. Crossway states that RMGW is produced according to Codex Alimentarius guidelines that are comparable to current good manufacturing practices and that all raw materials, processing aids, and food contact substances utilized are food grade and used in accordance with applicable U.S. regulations or are GRAS for their intended use.

Crossway provides specifications for RMGW that include the content of protein (11.5-14.5%), carbohydrates (82.5-88%), and limits for lactose ($\leq 85\%$), fat ($\leq 1.7\%$), moisture ($\leq 3\%$), ash ($\leq 1.5\%$), nitrites (≤ 2 mg/kg), nitrates (≤ 50 mg/kg), arsenic (≤ 0.1 mg/kg), cadmium (≤ 0.005 mg/kg), lead (≤ 0.02 mg/kg), mercury (≤ 0.1 mg/kg), and microorganisms, including *Salmonella* serovars (absent in 25 g), *Listeria monocytogenes* (absent in 25 g), and *Cronobacter* spp. (absent in 10 g). Crossway provides the results of three non-consecutive batch analyses to demonstrate that RMGW can be manufactured to meet these specifications.

Crossway estimates the dietary exposure to RMGW based on the intended use and infant formula consumption data from the 2017-2020 National Health and Nutrition Examination Survey. Crossway reports the mean and 90th percentile estimates of infant formula consumption for male and female infants 0-6 and 7-12 months of age and estimates dietary exposure to RMGW based on the maximum intended use level of 40 g/100 g formula powder and a recommended reconstitution rate of ~12.9 g/100 mL of formula as consumed. Crossway estimates the mean and 90th percentile eaters-only dietary exposure to RMGW for 0-6 months of age to be 41.4 g/person(p)/d (6.6 g/kg body weight (bw)/d) and 63.0 g/p/d (10.0 g/kg bw/d), respectively, and for 7-12 months of age to be 34.3 g/p/d (3.7 g/kg bw/d) and 57.6 g/p/d (6.2 g/kg bw/d), respectively.

To support safety, Crossway cites a long history of safe consumption of goat milk, dating back at least 6000 years. Crossway also discusses publicly available data and information to support the safety of RMGW that was either discussed in GRN 000644² or from an updated literature review. These data include three pivotal published studies conducted in healthy term infants up to 6 months of age who were fed goat milk-based formula, with or without added goat whey, in comparison to cow milk-based formula with added cow whey, or breastmilk, at levels up to 1 L per day. No significant reports of adverse effects were noted that could be attributed to the test articles used. Crossway concludes that these data demonstrate that goat milk-based formulas are safe, well tolerated, and provide adequate growth in infants when compared to breastmilk. While some of these studies did not use added goat whey for the goat milk-based infant formula, Crossway notes that the total protein content of these test formulas was similar and within the established limits for infant formulas. Further, the cow milk-based

² A combination of nonfat dry goat's milk and goat whey protein concentrate was the subject of GRN 000644. We evaluated this notice and responded in a letter dated October 11, 2016, stating that we had no questions at that time regarding the notifier's GRAS conclusion.

control infant formulas utilized in these studies contained added cow milk whey. Through supportive analytical data, Crossway demonstrates that RMGW and cow milk whey are compositionally similar based on a comparison of their macronutrient and amino acid profiles. Thus, Crossway further affirms that the safety data for infant formula with added cow whey is applicable to the safety of infant formula with added RMGW. Crossway states that the final goat milk-based, non-exempt infant formula for term infants to which RMGW will be incorporated will comply with the minimum and maximum infant formula nutritional requirements under 21 CFR 107.100. Crossway discusses that approximately 3% of infants have a cow milk allergy, which can primarily be attributed to protein components of the milk, primarily casein and whey, that are also present in other mammals' milk, including goats. As such, Crossway concludes that goat milk has a similar allergenic burden to cow milk.¹

Based on the totality of the data and information, Crossway concludes that RMGW is GRAS for its intended use.

Potential Labeling Issues

Under section 403(a) of the Federal Food, Drug, & Cosmetic (FD&C) Act, a food is misbranded if its labeling is false or misleading in any way. Section 403(r) of the FD&C Act lays out the statutory framework for labeling claims characterizing a nutrient level in a food or the relationship of a nutrient to a disease or health-related condition (also referred to as nutrient content claims and health claims). If products containing RMGW bear any nutrient content or health claims on the label or in labeling, such claims are subject to the applicable requirements and are under the purview of ONFL. OPMAS did not consult with ONFL on this issue or evaluate any information in terms of labeling claims. Questions related to food labeling should be directed to ONFL.

Intended Use in Infant Formulas

Under section 412 of the FD&C Act, a manufacturer of a new infant formula must make a submission to FDA providing required assurances about the formula at least 90 days before the formula is marketed. Our response to Crossway's GRAS notice does not alleviate the responsibility of any infant formula manufacturer that intends to market an infant formula containing RMGW to make the submission required by section 412. Infant formulas are the purview of the Office of Critical Foods in NCE.

Section 301(ll) of the FD&C Act

Section 301(ll) of the FD&C Act prohibits the introduction or delivery for introduction into interstate commerce of any food that contains a drug approved under section 505 of the FD&C Act, a biological product licensed under section 351 of the Public Health Service Act, or a drug or a biological product for which substantial clinical investigations have been instituted and their existence made public, unless one of the exemptions in section 301(ll)(1)-(4) applies. In our evaluation of Crossway's notice concluding that RMGW is GRAS under its intended conditions of use, we did not consider whether section 301(ll) or any of its exemptions apply to foods containing RMGW. Accordingly,

our response should not be construed to be a statement that foods containing RMGW, if introduced or delivered for introduction into interstate commerce, would not violate section 301(l).

Conclusions

Based on the information that Crossway provided, as well as other information available to FDA, we have no questions at this time regarding Crossway's conclusion that RMGW is GRAS under its intended conditions of use. This letter is not an affirmation that RMGW is GRAS under 21 CFR 170.35. Unless noted above, our review did not address other provisions of the FD&C Act. Food ingredient manufacturers and food producers are responsible for ensuring that marketed products are safe and compliant with all applicable legal and regulatory requirements.

In accordance with 21 CFR 170.275(b)(2), the text of this letter responding to GRN 001211 is accessible to the public at www.fda.gov/grasnoticeinventory.

Sincerely,

**Susan J.
Carlson -S**

Digitally signed by Susan
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