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

Re: GRAS Notice No. GRN 001132

Dear Ms. Mozingo:

The Food and Drug Administration (FDA, we) completed our evaluation of GRN 001132. We received the notice that you submitted on behalf of Norilia AS (Norilia) on February 13, 2023, and filed it on May 10, 2023. Norilia submitted amendments to the notice on August 10, September 5, September 21, December 4, and December 5, 2023. These amendments provided additional details on ingredient forms, specifications, intended use levels, food categories, dietary exposure estimates, and safety information.

The subject of the notice is hydrolyzed poultry protein (hydrolyzed chicken protein, hydrolyzed turkey protein, and hydrolyzed chicken and turkey protein) for use as a source of protein and flavoring in various foods at the maximum use levels specified in Table 1.[1] The notice informs us of Norilia's view that these uses of hydrolyzed poultry protein are GRAS through scientific procedures.

Table 1. Intended food categories and maximum use levels of hydrolyzed poultry protein

Food categories	**Maximum use level (%) (Powder)**	**Maximum use level (%) (Paste)**
Mayonnaise and other condiments	21	29
Tomato-based juices	1.3	2
Gravies	2	3
Seasonings for meat coatings/rubs and seasoning pastes	1.2	2
Soups	2.5	4
Snack foods (popcorn, pretzels, chips, and crackers)	10.3	17
Nutrition bars	30.5	50
Protein drinks and protein powder mixes	5.1	8
Ready-to-drink meal replacements and nutritional beverages	5.1	8
Formulas for enteral tube feeding	5.1	8

[1] Norilia states that hydrolyzed poultry protein is not intended for use in infant formula.

Our use of the term, "hydrolyzed poultry protein," 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 Center for Food Safety and Applied Nutrition. The Office of Food Additive Safety (OFAS) did not consult with ONFL regarding the appropriate common or usual name for "hydrolyzed poultry protein."

Norilia describes hydrolyzed poultry protein as either a brownish paste or beige powder obtained from the enzymatic hydrolysis of raw poultry (chicken and/or turkey) carcasses. Hydrolyzed poultry protein is mainly composed of peptides varying in length with lesser amounts of fat and ash.

Norilia describes the manufacturing process for hydrolyzed poultry protein as a standard enzymatic hydrolysis process that begins with the homogenization of raw poultry carcasses in water followed by the use of food-grade protease enzymes under controlled conditions. The hydrolysis is terminated by inactivating the enzymes. After hydrolysis, the mixture is centrifuged to separate the water-soluble proteins, water insoluble proteins/minerals and fats/oils. The water-soluble portion is vacuum dried to yield the paste form that can be spray-dried to obtain the powder form. Norilia states that hydrolyzed poultry protein is manufactured according to current good manufacturing practices using protease enzymes permitted by U.S. regulations.

Norilia provides specifications for hydrolyzed poultry protein as a paste that include protein (>50%), dry matter (>59%), fat (<3%), ash (<6%), lead, mercury, arsenic, and cadmium (each <0.1 mg/kg), as well as limits for microorganisms. Norilia provides specifications for hydrolyzed poultry protein as a powder that include protein (>80%), dry matter (>94%), fat (<6%), ash (<8%), lead, mercury, and cadmium (each <0.1 mg/kg), and arsenic (<0.3 mg/kg), as well as limits for microorganisms. Norilia provides the results from the analyses of five non-consecutive batches for the paste and three non-consecutive batches for the powder to demonstrate that hydrolyzed poultry protein can be manufactured to meet these specifications.

Norilia estimates the dietary exposure to hydrolyzed poultry protein in both the paste and the powder forms from the intended uses using food consumption data from the 2017-2018 National Health and Nutrition Examination Survey. Norilia estimates the eaters-only dietary exposure to hydrolyzed poultry protein in the paste form to be 12.0 g/person (p)/d (0.19 g/kg body weight (bw)/d) at the mean and 26.2 g/p/d (0.42 g/kg bw/d) at the 90th percentile for the U.S. population aged 1 year and older. The corresponding dietary exposure to hydrolyzed poultry protein in the powder form is estimated to be 7.3 g/p/d (0.12 g/kg bw/d) at the mean and 16.0 g/p/d (0.25 g/kg bw/d) at the 90th percentile for the U.S. population aged 1 year and older. To estimate the dietary exposure to the protein component of hydrolyzed poultry protein, Norilia applies

the conservative protein content of 55% to the dietary exposure estimates based on the intended uses of hydrolyzed poultry protein in the paste form. Norilia estimates the eaters-only dietary exposure to protein from the intended use of hydrolyzed poultry protein in the paste form to be 6.6 g/p/d (0.1 g/kg bw/d) at the mean and 14.4 g/p/d (0.23 g/kg bw/d) at the 90th percentile for the U.S. population aged 1 year and older. Norilia states that the intended uses of the paste and powder forms of hydrolyzed poultry protein are substitutional for each other on a protein basis. Norilia also states that hydrolyzed poultry protein will be substitutional for other animal and vegetable protein sources added to food and therefore, the cumulative dietary exposure to protein is not expected to increase.

Norilia states that hydrolysates, which are made up primarily of di- and tripeptides, are absorbed more rapidly in the small intestine than free amino acids and intact proteins. The di- and tripeptides are absorbed intact, hydrolyzed intercellularly, and then released as free amino acids or intact into the circulation. Norilia discusses several publications on the safety of protein hydrolysates in animals. Norilia notes that fish protein hydrolysate fed to Wistar and genetically obese Zucker rats did not produce adverse reactions. Norilia also cites a safety assessment study conducted in Sprague-Dawley rats fed Maillard reaction products of chicken bone hydrolysate at 9, 3, 1 or 0% for 13 weeks. Norilia notes that there were no adverse effects observed either grossly or histopathologically versus the control animals. The only serological change in these animals was a significant decrease in alanine aminotransferase in both sexes. Norilia also states that the potential adverse effects of high protein consumption were reviewed in GRN 000575,[2] and include decreased renal function, decreased bone health, kidney stones and increased potential for allergenicity. Norilia discusses the increased potential for allergenicity of hydrolyzed poultry protein. Norilia notes that poultry meat allergy ranges from 0 – 13% worldwide and that the 13% occurrence includes not only consumption but inhalation of vapor during cooking and skin contact. Norilia cites a recent article that estimates chicken meat intolerance/allergy specific to consumption of chicken meat as 0.6 – 5%. Norilia also states that they had conducted a search of the literature through December 2022.

Based on the totality of data and information included in their notice, Norilia concludes that hydrolyzed poultry protein is GRAS for its intended use.

Standards of Identity

In the notice, Norilia states its intention to use hydrolyzed poultry protein in several food categories, including foods for which standards of identity exist, located in Title 21 of the CFR. We note that an ingredient that is lawfully added to food products may be used in a standardized food only if it is permitted by the applicable standard of identity.

[2] Oat protein was the subject of GRN 000575. We evaluated this notice and responded in a letter dated September 18, 2015, stating that we had no questions at that time regarding the notifier's GRAS conclusion.

Use in Products under USDA Jurisdiction

As provided under 21 CFR 170.270, during our evaluation of GRN 001132, we coordinated with the Food Safety and Inspection Service (FSIS) of the United States Department of Agriculture. Under the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act, FSIS determines the efficacy and suitability of ingredients used in meat, poultry, and egg products, and prescribes safe conditions of use. Suitability relates to the ingredient's effectiveness in performing its intended technical effect and the assurance that the ingredient's use will not result in products that are adulterated or misleading for consumers.

FSIS has advised the following with respect to the statutes it administers:

> FSIS has completed its review and has no objection to the use of hydrolyzed poultry protein as a flavoring agent at levels up to 4% product formulation in FSIS amenable soups, up to 3% product formulation in FSIS amenable gravies, and up to 0.2% product formulation for meat, poultry, and Siluriformes fish products when used in seasoning blends or rubs (2 g hydrolyzed chicken or turkey protein / 100 g seasoning blend or rub with an estimated maximum use level of seasoning blend or rub in meat, poultry, and Siluriformes fish products of 10%).
>
> Regarding labeling, meat, poultry, and Siluriformes fish products containing this hydrolyzed chicken and turkey protein are required to be labeled in the ingredients statement with the common or usual name. The common or usual name for this product is "hydrolyzed chicken and turkey protein." If only chicken or only turkey is used as a source material, the common or usual name is "hydrolyzed chicken protein" or "hydrolyzed turkey protein."

FSIS requested that we advise you to seek regulatory guidance from its Risk Management and Innovations Staff (RMIS) about the use of hydrolyzed poultry protein in meat, poultry, and egg products. You should direct such an inquiry to Stephanie Hretz, Director, RMIS, Office of Policy and Program Development, FSIS by email at Stephanie.Hretz@usda.gov.

Section 301(ll) of the Federal Food, Drug, and Cosmetic Act (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 Norilia's notice concluding that hydrolyzed poultry protein 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 hydrolyzed poultry protein. Accordingly, our response should not be construed to be a statement that foods containing hydrolyzed poultry protein, if introduced or delivered

for introduction into interstate commerce, would not violate section 301(ll).

Conclusions

Based on the information that Norilia provided, as well as other information available to FDA, we have no questions at this time regarding Norilia's conclusion that hydrolyzed poultry protein is GRAS under its intended conditions of use. This letter is not an affirmation that hydrolyzed poultry protein 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 001132 is accessible to the public at www.fda.gov/grasnoticeinventory.

Sincerely,

Susan J. Carlson -S

Digitally signed by Susan J. Carlson -S
Date: 2024.01.29 16:18:48 -05'00'

Susan J. Carlson, Ph.D.
Director
Division of Food Ingredients
Office of Food Additive Safety
Center for Food Safety
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cc: Stephanie Hretz, M.P.H.
Director
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