



Melvin S. Drozen
Keller and Heckman LLP
1001 G. Street, N.W.
Suite 500 West
Washington, DC 20001

Re: GRAS Notice No. GRN 000927

Dear Mr. Drozen:

The Food and Drug Administration (FDA, we) completed our evaluation of GRN 000927. We received the notice that you submitted on behalf of Adept Limited (Adept) on March 30, 2020, and filed it on June 15, 2020. Adept submitted amendments to the notice on August 6, 2020; August 13, 2020; September 2, 2020; September 15, 2020; September 24, 2020; and December 9, 2020. These amendments include revised specifications, clarifications regarding the use level, discussion of the removal of the vinyl acetate monomer during manufacturing, additional details about the scope of the literature search and the validity of the analytical methods for their intended uses, as well as additional information about the intended conditions of use during the processing of sheep, lambs, and hogs.

The subject of the notice is polyvinyl alcohol (PVOH) [CAS. Reg. No. 9002-89-5] for use as a component of water-soluble anus plugs for use in abattoirs to block fecal material during processing of sheep, lambs, and hogs at levels up to 59% of the plug formulation. The notice informs us of Adept's view that this use of PVOH is GRAS through scientific procedures.

Adept provides information about the identity of PVOH (CAS Reg. No. 9002-89-5). Adept describes PVOH as an odorless, translucent, white or cream-colored granular powder. The molecular formula is $(C_2H_3OR)_n$, where $R=H$ or $COCH_3$ randomly distributed and the molecular weight ranges between 22,000 and 27,000 g/mol.

Adept describes the manufacturing process of, and provides specifications for, PVOH. PVOH is produced by polymerization of vinyl acetate monomer in the presence of methanol and an initiator with a controlled hydrolysis of the resulting polyvinyl acetate. The specifications provided include limits for lead (<2 mg/kg), methanol (<1%), methyl acetate (<1%), residue on ignition (<1%), and degree of hydrolysis (86.5-89.0%). Adept notes these specifications comply with those in the Food Chemicals Codex (11th Edition, 2016) and provides the results of three non-consecutive batch analyses of PVOH to demonstrate that it can be manufactured to meet these specifications.

U.S. Food and Drug Administration
Center for Food Safety & Applied Nutrition
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Adept intends to use PVOH in post-slaughter water-soluble anal plugs for use in blocking fecal leakage of slaughtered sheep, lambs, and hogs. Adept states that the plug is expected to remain intact during insertion of the plug and bung removal and that there is no transfer of PVOH from the plug to other parts of the carcass. Further, Adept notes that PVOH is water-soluble, and the plug is expected to dissolve and be completely washed out along with the fecal matter during the vigorous cleaning of the bung portion. Considering the extensive washing steps, Adept concludes that there is no dietary exposure to PVOH or its constituents.

Adept discusses publicly available data and information supporting the safety of the intended use of PVOH, noting the previous GRAS conclusions from GRNs 000141 and 000767.¹ Adept states that the publicly available information in GRN 000927 was gathered during multiple literature searches, with the most recent update in August 2020. Adept discusses published absorption, distribution and elimination studies of ¹⁴C-labeled PVOH in rats and concludes that PVOH is not broken down or absorbed to any significant extent. Adept discusses a published subchronic study evaluating potential systemic or neurotoxic effects of dietary administration of PVOH to rats, concluding that there were no adverse effects up to the highest doses of 5,000 mg/kg-bw/d for 90 days. Adept also discusses a published two generation dietary study in rats and concluded that there were no effects on reproductive or developmental parameters evaluated up to the highest dose of 5,000 mg/kg-bw/d. Based on the published results from a standard battery of three genotoxicity studies, Adept concludes that PVOH is not genotoxic. Adept further describes the safety conclusions of PVOH by the Joint FAO/WHO Expert Committee on Food Additives and the European Food Safety Authority.

Based on the totality of data and information, Adept concludes that PVOH is GRAS under the conditions of its intended use.

Use in Products under USDA Jurisdiction

As provided under 21 CFR 170.270, during our evaluation of GRN 000927, 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 PVOH as a component of water-soluble anus plugs for use in abattoirs to block fecal material

¹ PVOH was the subject of GRN 000141 and GRN 000767. We evaluated these notices and responded in respective letters, stating that we had no questions at that time regarding the respective notifier's GRAS conclusion.

during processing of sheep, lambs, and hogs at levels up to 59% of the plug formulation.

Regarding labeling, FSIS would consider PVOH a processing aid that does not require a labeling statement under the accepted conditions of use. If Adept has any questions regarding labeling, Adept should contact Ms. Rosalyn Murphy-Jenkins at (301) 504-0879 or via email at Rosalyn.Murphy-Jenkins@usda.gov.

FSIS requested that we advise Adept to seek regulatory guidance from its Risk Management and Innovations Staff (RMIS) about the use of PVOH in meat, poultry, and egg products. Adept should direct such an inquiry to Dr. Melvin Carter, Director, RMIS, Office of Policy and Program Development, FSIS by email at Melvin.Carter@fsis.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 Adept's notice concluding that PVOH 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 PVOH. Accordingly, our response should not be construed to be a statement that foods containing PVOH, if introduced or delivered for introduction into interstate commerce, would not violate section 301(ll).


Conclusions

Based on the information that Adept provided, as well as other information available to FDA, we have no questions at this time regarding Adept's conclusion that PVOH is GRAS under its intended conditions of use. This letter is not an affirmation that PVOH 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 000927 is accessible to the public at www.fda.gov/grasnoticeinventory.

Sincerely,

Susan J.
Carlson -S

 Digitally signed by Susan J.
Carlson -S
Date: 2021.02.26 17:36:17
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Susan Carlson, Ph.D.
Director
Division of Food Ingredients
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cc: Melvin Carter, Ph.D.
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