



# BEYOND PESTICIDES

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Ms. Michelle Arsenault  
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## Re. HS: Sunset Materials on §205.605

These comments to the National Organic Standards Board (NOSB) on its Spring 2017 agenda are submitted on behalf of Beyond Pesticides. Founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

These comments address handling materials on §205.605(a) and §205.605(a) due to sunset in 2019, except acidified sodium chlorite and other chlorine compounds, which are addressed separately. Please use the outline panel on the left for easy navigation.

## §205.605(a)

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Technical information for most of these materials is in need of updating. In particular, the need for these materials and alternatives should be examined.

### Attapulgit

**Reference: 205.605(a) – as a processing aid in the handling of plant and animal oils.**

In 2015, only one commenter (Aurora Dairy) submitted written comments in support of attapulgit, and gave no reasons for including it on a listed of materials it supported. OTA reported, “Based on survey results and/or feedback received directly by members, this material does not meet the essentiality criteria listed by OTA.” The NOSB, in considering attapulgit in 2015, also found no arguments in favor of relisting, except the following: “However, many of the limited number of comments we received note that there was no negative reason to remove it from the list. In subcommittee, we had voted to leave it on the list. I would still suggest that there's no real reason to take it off the list with a negative reason that it may be being used out there and we simply have not identified that person, or that organization, or it may be being used in

combination with some of the other filter aids, which are sometimes used together since attapulgite, bentonite, and kaolin are very similar in the manner in which they have been used.”

Mining and use do pose air quality hazards that are likely similar for other mineral powders, including bentonite and diatomaceous earth.

## Conclusion

**Given the lack of interest, attapulgite should be allowed to sunset.**

## Bentonite

**Reference: 205.605(a)**

In 2015, supporters gave the following reasons to relist bentonite:

- It is essential for filtering orange juice.
- Bentonite is a natural substance that is mined from the earth.
- It is an important filtering aid that is used to filter organic oils.
- Bentonite is especially useful in removing protein impurities.
- It is often used in conjunction with diatomaceous earth.
- Bentonite is essential to the wine industry as a processing aid added to clarify wine. Consumers expect a clear wine without cloudiness or sediment, and agricultural alternatives do not perform the same essential function.
- Bentonite is used by organic body care producers to absorb oil from skin.
- There are no alternatives to bentonite or kaolin clay for personal care products.

Like other mineral powders, the mining creates environmental damage and dust that is hazardous to workers.

## Conclusion

**The Handling Subcommittee should request an updated technical review of bentonite that examines hazards during mining and manufacturing, need, and alternatives.**

## Diatomaceous earth

**Reference: 205.605(a) - food filtering aid only.**

Supporters of the relisting of diatomaceous earth in 2015 gave the following reasons:

- Diatomaceous earth is a natural substance that is mined from the earth.
- It is an extremely important filtering aid that is used to filter organic products.
- It is the primary filtering aid and a bleaching agent used for many organic oils.
- Diatomaceous earth is used to remove insolubles and impurities in solutions.
- It improves the quality, flavor and appearance of ingredients without leaving a residual in the ingredient.
- Applications include processing of vinegar, sugar, and maple syrup processing.

Like other mineral powders, the mining creates environmental damage and dust that is hazardous to workers.

## Conclusion

**The Handling Subcommittee should request an updated technical review of diatomaceous earth that examines hazards during mining and manufacturing, need, and alternatives.**

## Nitrogen

**Reference: 205.605(a) - oil-free grades.**

In 2015, supporters gave the following reasons supporting the relisting of nitrogen:

- It is an oxygen barrier for storage of refined oil.
- Nitrogen is an inert atmospheric gas that we breathe in with every breath. It is perfectly safe.
- Many organic food manufacturers use nitrogen flush to displace the oxygen that can oxidize food, making it rancid and reducing the shelf-life of packaged foods.
- Nitrogen is used to displace oxygen in many organic oils and seeds packaged in bottles and gusseted bags, respectively.
- Liquid nitrogen is used in cryogenic cooling/freezing in the frozen food industry. The nitrogen dissipates into the air after freezing and does not remain in the food product.

MOSA said, "We might benefit from more education regarding the oil-free restriction."

Molecular nitrogen (N<sub>2</sub>) is relatively inert and is not a greenhouse gas.

## Conclusion

**Beyond Pesticides supports the relisting of nitrogen for the reasons given above.**

## Sodium carbonate

**Reference: 205.605(a)**

In 2015, supporters of relisting of sodium carbonate offered the following reasons:

- Sodium carbonate is used as a pH control agent in the production of organic starches where other pH control agents, such as hydrochloric acid, sulfuric acid, and sodium hydroxide are not approved.
- It is used in conjunction with alginates to help sequester calcium, it allows the alginate to work more effectively during gelling and thus helps to limit the usage of alginates.
- It is naturally occurring in our environment.

On the other hand, sodium carbonate is caustic and corrosive, presenting a hazard of serious eye damage, acute toxicity through inhalation, and respiratory tract irritation.

The Handling Subcommittee has not received a technical review that examines alternatives.

## Conclusion

**The Handling Subcommittee should request an updated technical review of sodium carbonate that examines hazards during mining and manufacturing, need, and alternatives.**

§205.605(b)

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## Acidified sodium chlorite and other chlorine compounds

See separate document.

## Carbon dioxide

Reference: 205.605(b)

In 2015, several commenters supported the use of carbon dioxide for pest control, carbonation, and chilling of food. Reasons given for relisting are:

- Under §205.271 (Facility pest management practice standard) a producer must use management practices to prevent or control pests. If management practices prove ineffective, a material on the National List may be used to prevent or control the pests. Further, listed materials must be used before using a pest control material that is not on the National List (NOP Regulations §205.271). Carbon dioxide is a pest control material that can be applied in a confined space and can come in contact with certified organic product.
- There are two materials listed in §205.605(b) that are often overlooked for use as pest fumigants: ozone and carbon dioxide. Both work by displacing or reducing available oxygen, essentially suffocating pests.
- In the produce trade, carbon dioxide can be used safely and effectively for pest control in storage facilities. It is also useful in handling other types of products that are stored in silos, bins, or other enclosed areas and to control pests that may get into packaging materials.
- Carbon dioxide is a common gas in the environment. We use carbon dioxide to carbonate a number of organic beverages.
- Carbon dioxide is used both for freezing foods and also for accelerated cooling, a critical food safety procedure. The carbon dioxide dissipates into the air after the cooling/freezing is complete and does not remain in the food product. We do not currently use carbon dioxide in manufacture but would like to have this as an option in the future should we need additional cooling on new products.

If carbon dioxide used in organic processing is, as most is according to the technical review, produced as a byproduct of other processes, then its use in organic processing results in delayed release into the atmosphere, rather than increased release.

## Conclusion

**Beyond Pesticides supports the relisting of carbon dioxide for the reasons listed above.**

## Magnesium chloride

Reference: 205.605(b) – derived from sea water.

According to the Petitioned Substances Database, magnesium chloride for use in crops is “classified as nonsynthetic when extracted from brine, seawater, and salt deposits.” The 2016 TR describes both nonsynthetic and synthetic processes by which magnesium chloride is produced from sea water. It does not really make sense to list only the synthetic form. We suggest moving the listing to §205.605(a) or at least adding a listing on §205.605(a). While the coagulant use for making tofu is consistent with organic practices, the use for color enhancement is not if magnesium chloride is correctly listed as synthetic on §205.605(b), so if magnesium chloride derived from sea water remains on §205.605(b), an annotation should be added, “as a coagulant in making tofu.”

## Conclusion

The HS should revisit the classification decision for magnesium chloride derived from sea water. If it is found to be nonsynthetic, then it should be petitioned for listing on §205.605(a) and removed from §205.605(b). As a nonsynthetic, the use for color enhancement would not be contrary to §205.600(b)(4). Nevertheless, the only use supported by comments is the use for tofu, so we support an annotation of the new listing, “as a coagulant in making tofu.”

## Potassium acid tartrate

Reference: 205.605(b)

FDA regulations require that “potassium acid tartrate” be obtained as a byproduct of wine manufacture.<sup>1</sup> As such, the impacts of its production are very similar to those of tartaric acid.

## Classification

The technical review (TR) questions the classification of potassium acid tartrate as synthetic, noting that it is an intermediary in the production of tartaric acid, which is classified as nonsynthetic.<sup>2</sup> The production process as outlined in the TR appears to be a nonsynthetic process, and therefore the NOSB should re-examine the classification of potassium acid tartrate.

## Environmental and health impacts

Since potassium acid tartrate must be made from grape wine, the evaluation of tartaric acid must thus take into consideration the use of pesticides in the non-organic production of grapes and the availability of organic grape wine for this purpose, as well as the potential availability of potassium acid tartrate from organic grape wine if the demand existed. The following impacts are derived from the Beyond Pesticides web-based database *Eating with a Conscience*.<sup>3</sup>

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<sup>1</sup> Technical Review of Potassium Acid Tartrate, 2017. Lines 222-224.

<sup>2</sup> TR lines 226-333.

<sup>3</sup> <http://www.beyondpesticides.org/resources/eating-with-a-conscience/choose-a-crop?foodid=19>.

## Grapes

**California Farmworker Poisonings, 1992–2010:** 1,234 reported (CA acreage: 796,000). These poisoning incidents only represent the tip of the iceberg because they only reflect reported incidents in one state. It is widely recognized that pesticide incidents are underreported and often misdiagnosed.

**Pesticide Tolerances —Health and Environmental Effects:** The database shows that while grapes grown with toxic chemicals show low pesticide residues on the finished commodity, there are 124 pesticides with established tolerance for grapes, 38 are acutely toxic creating a hazardous environment for farmworkers, 108 are linked to chronic health problems (such as cancer), 20 contaminate streams or groundwater, and 99 are poisonous to wildlife.

**Pollinator Impacts:** In addition to habitat loss due to the expansion of agricultural and urban areas, the database shows that there are 34 pesticides used on grapes that are considered toxic to honey bees and other insect pollinators. For more information on how to protect pollinators from pesticides, see Beyond Pesticides' BEE Protective webpage.

- This crop is dependent on pollinators.
- This crop is foraged by pollinators.

## Essentiality

Those who supported the relisting of potassium acid tartrate in 2015 said:

- Potassium acid tartrate, commonly known as potassium bitartrate and cream of tartar, is used by the wine industry to adjust acidity. Potassium bitartrate is a natural byproduct of the winemaking process, precipitating out of wine to produce tartrate crystals. Potassium bitartrate may be added to wines to adjust acidity to ensure that wine meets consumer expectations for flavor.
- It is a common, safe leavening agent. It is used in many organic baked goods.

However, the TR suggests that potassium acid tartrate from organic grapes should be available if the market existed for it:

An alternative to potassium acid tartrate, currently classified as a synthetic nonagricultural substance, would be to isolate cream of tartar from organically grown grapes. Organically grown grapes were found to contain as much as or more tartaric acid than conventionally grown grapes (Henick-Kling 1995), depending on the degree of maturity of the grapes. Organic grapes used to produce wine consequently would be expected to create at least as much lees and argol during the winemaking process as conventionally grown grapes. Isolation of potassium acid tartrate from winemaking sediments can be accomplished using processes and substances permitted by the NOP regulations (e.g., water extraction; activated charcoal as filtering aid), thus raising the question of whether potassium acid tartrate could be eligible for organic certification.<sup>4</sup>

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<sup>4</sup> TR, lines 496-504.

Use of potassium acid tartrate from organic wine would eliminate the impacts associated with chemical-intensive grape production.

## Conclusion

Although cream of tartar (potassium acid tartrate) appears to be a useful ingredient that presents few hazards, it probably does not belong on §205.605(b). It is an ingredient in many recipes that seems to be absent in many kitchens, so cooks have learned to do without it.<sup>5</sup>

**Beyond Pesticides asks the HS to revisit the classification of potassium acid tartrate and to investigate the possibility of encouraging its production from organic grapes.**

## Sodium phosphates

**Reference: 205.605(b) - for use only in dairy foods.**

Sodium phosphates are used in dairy products as emulsifiers, stabilizers, preservatives, and to create certain textures. They can lead to imbalances in the calcium:phosphorus ratio in the body. Phosphate refining releases heavy metals and radioactivity, but some heavy metal contamination may remain in the sodium phosphate products.

The 2016 Technical Review of phosphates examines health impacts of an elevated phosphate load. Phosphate is much more rapidly assimilated from food additives than naturally occurring phosphorus in food.<sup>6</sup> The TR examined the impacts of imbalances in calcium, phosphorus, potassium, and magnesium, and found that phosphate food additives contribute to an imbalance, concluding:

Summary: The American diet provides very large amounts of phosphorus and sodium. The published phosphorus content is not based on analysis, so the amount of phosphorus consumed is understated. Half of the adult American population consumes less than the EAR of magnesium and essentially no one nowadays consumes the AI of potassium. A substantial proportion of Americans, almost 40%, consume less than the EAR of calcium (Fulgoni et al. 2011). Thus, the major mineral content of the adult American diet is severely imbalanced.<sup>7</sup>

More recent studies have shown that inorganic forms of phosphate, such as sodium phosphates, cause hormone-mediated harm to the cardiovascular system. A review found that they “may harm the health of persons with normal renal function. This judgment has been made on the basis of large-scale epidemiological studies and is supported by the latest findings of basic research.”<sup>8</sup> Other research along these lines is reported in the TR.

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<sup>5</sup> <http://www.fitday.com/fitness-articles/nutrition/healthy-eating/substitutes-for-cream-of-tartar.html>.

<sup>6</sup> TR, lines 586-591; 607-608.

<sup>7</sup> TR, lines 570-575.

<sup>8</sup> Ritz, E., Hahn, K., Ketteler, M., Kuhlmann, M. K., & Mann, J. (2012). Phosphate Additives in Food—a Health Risk. *Deutsches Ärzteblatt International*, 109(4), 49–55.

## Conclusion

The NOSB should seek to eliminate the addition of inorganic phosphates to organic food. The technical review addressed all phosphates, but sodium phosphates are especially problematic because they add both sodium and phosphate –both of which are oversupplied in American diets. If there are particular uses of sodium phosphate that are essential, then the Handling Subcommittee should propose an annotation limiting them to those uses, to move parallel to the sunset motion.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry Shistar".

Terry Shistar, Ph.D.  
Board of Directors

DRAFT