

EVALUATION CRITERIA FOR SUBSTANCES ADDED TO THE NATIONAL LIST

Category 1. Adverse impacts on humans or the environment?

Substance Sulfuric Acid

1. Are there adverse effects on environment from manufacture, use, or disposal? [§205.600 b.2]			X	
2. Is there environmental contamination during manufacture, use, misuse, or disposal? [§6518 m.3]	X			One of the primary sources of sulfuric acid released to the environment is its manufacture. Sulfuric acid released into water will increase the bioavailability of heavy metals. (TAP, lines 187-191)
3. Is the substance harmful to the environment? [§6517c(1)(A)(i);6517(c)(2)(A)i]	X			Sulfuric acid can kill organisms. Air borne sulfuric acid can cause respiratory pneumonia. (TAP lines 187-200 & 234-242) If sulfuric acid comes in contact with bodies of water the bioavailability of heavy metals increases. (Ostiguy)
4. Does the substance contain List 1, 2, or 3 inerts? [§6517 c (1)(B)(ii); 205.601(m)2]		X		
5. Is there potential for detrimental chemical interaction with other materials used? [§6518 m.1]	X			Sulfuric acid can interact with other chemicals used if it comes in contact with the other materials. (TAP lines 187-191) Sulfuric acid, when used as a pH adjustor for livestock manure, is changed to sulfate, which is plant nutrient. (TAP lines 226-227) Sulfuric acid is corrosive.
6. Are there adverse biological and chemical interactions in agro-ecosystem? [§6518 m.5]	X			Sulfuric acid, when used in livestock manure, is changed to sulfate, which is in this case a synthetically derived plant nutrient. (TAP lines 226-227)
7. Are there detrimental physiological effects on soil organisms, crops, or livestock? [§6518 m.5]	X	X		Sulfuric acid is corrosive and, at high concentrations, can kill organisms. No detrimental physiological effects on soil organisms, crops or livestock are expected for this usage.
8. Is there a toxic or other adverse action of the material or its breakdown products?[§6518 m.2]	X	X		Sulfuric acid is corrosive; it can harm eyes, skin, and respiratory and gastrointestinal tracts. No human dietary concerns; it is GRAS. (TAP lines 294-308.) Sulfuric acid and its breakdown products are not expected to cause toxic or other adverse actions when used properly.
9. Is there undesirable persistence or concentration of the material or breakdown products in environment?[§6518 m.2]	X	X		Sulfuric acid is not persistent. Its breakdown products are sulfate ions. It can persist in the environment if the soil is unable to neutralize it. (TAP lines 330-341)
10. Is there any harmful effect on human health?[§6517 c (1)(A)(i); 6517 c(2)(A)i; §6518 m.4]	X			Skin, eye respiratory and gastrointestinal tract irritation; EPA Category I toxicity; aerosol is a suspected human carcinogen (ACGIH); H ₂ SO ₄ mist is a human carcinogen (IARC); protective clothing, eyewear & breathing protection are needed (TAP lines 294-325)
11. Is there an adverse effect on human health as defined by applicable Federal regulations? [205.600 b.3]			X	
12. Is the substance GRAS when used according to FDA's good manufacturing practices? [§205.600 b.5]			X	
13. Does the substance contain residues of heavy metals or other contaminants in excess of FDA tolerances? [§205.600 b.5]			X	

¹If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

Category 2. Is the Substance Essential for Organic Production? Substance Sulfuric Acid

1. Is there a natural source of the substance? [§205.600 b.1]			X	
2. Is there an organic substitute? [§205.600 b.1]			X	
3. Is the substance essential for handling of organically produced agricultural products? [§205.600 b.6]			X	
4. Is there a wholly natural substitute product? [§6517 c (1)(A)(ii)]	X			Citric acid (Crops Committee: May not be adequate due to economic reasons)
5. Is the substance used in handling, not synthetic, but not organically produced? [§6517 c (1)(B)(iii)]			X	
6. Is there any alternative substances? [§6518 m.6]	X			Composting animal manure can also be used. Stabilization of animal manures can also be accomplish with unreacted carbon, citric acid, lactic acid bacteria or materials such as clay, peat, and zeolite, e.g., clinoptilolite. (TAP lines 356-387)
7. Is there another practice that would make the substance unnecessary? [§6518 m.6]	X			Composting animal manure can also be used. Stabilization of animal manures can also be accomplish with unreacted carbon, lactic acid bacteria or materials such as clay, peat, and zeolite, e.g., clinoptilolite. (TAP lines 356-387) Other types of approved composted materials and dehydrated manure can be used. Crop rotation and use of a cover crop can also be used. (TAP lines 409-416)

¹If the substance under review is for crops or livestock production, all of the questions from 205.600(b) are N/A—not applicable.

Category 3. Is the substance compatible with organic production practices?

Substance Sulfuric Acid

1. Is the substance compatible with organic handling? [§205.600 b.2]			X	
2. Is the substance consistent with organic farming and handling? [§6517 c (1)(A)(iii); 6517 c (2)(A)(ii)]		X		Sulfuric acid is the primary agent of acid rain, it is an air pollutant (Tap lines 46-50) Sulfuric acid, when used in livestock manure, is changed to sulfate, which is in this case a synthetically derived plant nutrient. (TAP lines 226-227)
3. Is the substance compatible with a system of sustainable agriculture? [§6518 m.7]		X		Sulfuric acid is the primary agent of acid rain, it is an air pollutant (Tap lines 46-50) Sulfuric acid, when used in livestock manure, is changed to sulfate, which is in this case a synthetically derived plant nutrient. (TAP lines 226-227)
4. Is the nutritional quality of the food maintained with the substance? [§205.600 b.3]			X	
5. Is the primary use as a preservative? [§205.600 b.4]			X	
6. Is the primary use to recreate or improve flavors, colors, textures, or nutritive values lost in processing (except when required by law, e.g., vitamin D in milk)? [205.600 b.4]			X	
7. Is the substance used in production, and does it contain an active synthetic ingredient in the following categories:	X			
a. copper and sulfur compounds;		X		
b. toxins derived from bacteria;		X		
c. pheromones, soaps, horticultural oils, fish emulsions, treated seed, vitamins and minerals?		X		
d. livestock parasiticides and medicines?		X		
e. production aids including netting, tree wraps and seals, insect traps, sticky barriers, row covers, and equipment cleaners?	X			The material is a production aid. Sulfuric acid reduces the loss of nitrogen during the manure drying process.

¹If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

NOSB COMMITTEE RECOMMENDATION

Form NOPLIST1, Committee Transmittal to NOSB

For NOSB Meeting: _____	Substance: <u>Sulfuric Acid</u>
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A. Evaluation Criteria (Documentation attached; committee recommendation attached)

	Criteria Satisfied?
1. Impact on humans and environment	Yes No X (see B below)
2. Availability criteria	Yes No X (see B below)
3. Compatibility & consistency	Yes No X (see B below)

B. Substance fails criteria? Criteria category: <u>1, 2, & 3</u> Comments: See comments below - D (3)	C. Proposed Annotation: _____ Basis for annotation: To meet criteria above: _____ Criteria: _____ Other regulatory criteria: _____ Citation: _____
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D. Recommended Committee Action & Vote: Motion by: Nancy

Seconded: Jeff

Vote:		Agricultural	Nonagricultural	Crops	X
Yes: <u>5</u>		X	Not synthetic	Livestock	
No: <u>0</u>		Allowed ¹	Prohibited ²	Handling	
Abstain: <u>0</u>		No restriction	Deferred ⁴	Rejected ³	X

1—substance voted to be added as "allowed" on National List

Annotation: _____

2—substance to be added to "prohibited" paragraph of National List

Describe why a prohibited substance: _____

3—substance was rejected by vote for amending National List

Describe why material was rejected Sulfuric acid, when used in livestock manure, is changed to sulfate, which is in this case a synthetically derived plant nutrient. Additionally, it is an important air pollutant, e.g. acid rain. Other wholly natural materials can be used (See Category 2, questions 4, 6 & 7)

4—substance was recommended to be deferred

Describe why deferred; if follow-up is needed. If follow-up needed, who will follow up _____