NOSB NATIONAL LIST
FILE CHECKLIST

PROCESSING

MATERIAL NAME: #25 Tocopherols

✔ NOSB Database Form

✔ References

✔ MSDS (or equivalent)

FASP (FDA)

TAP Reviews from: Joe Montecalvo, Rich Theuer
NOSB/NATIONAL LIST
COMMENT FORM
PROCESSING

Material Name: #25 Tocopherols

Please use this page to write down comments, questions, and your anticipated vote(s).

COMMENTS/QUESTIONS:

1. In my opinion, this material is:
   _____ Synthetic _____ Non-synthetic.

2. Should this material be allowed in an “organic food” (95% or higher organic ingredients)? _____ Yes _____ No
   (IF NO, PROCEED TO QUESTION 3.)

3. Should this substance be allowed in a “food made with organic ingredients” (50% or higher organic ingredients)? _____ Yes _____ No
TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: August 29, 1995

Name of Material: Tocopherols
Reviewer Name: Dr. Joseph Montefuoco

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

Synthetic (Check one of the following)

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

___ Synthetic Allowed  ___ Prohibited Natural

or, ___ Non-synthetic (Allowed as an ingredient in organic food)
 ___ Non-synthetic (Allowed as a processing aid for organic food)

or, ___ this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List?

Only as a Food Antioxidant

Please comment on the accuracy of the information in the file: Good

Any additional comments? (attachments welcomed) — None

Do you have a commercial interest in this material? ___ Yes; ___ No

Signature ______________________ Date 7/3/95
Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)

(1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

(2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

(3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

(4) the effect of the substance on human health;
   - has been used in U.T.E. dietary supplements

(5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

(6) the alternatives to using the substance in terms of practices or other available materials; and

(7) its compatibility with a system of sustainable agriculture.
TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: August 29, 1995

Name of Material: Tocopherols
Reviewer Name: R. THEUER

Is this substance Synthetic or non-synthetic? Explain (if appropriate)
SYNTHETIC
If synthetic, how is the material made? (please answer here if our database form is blank)
SEE ATTACHED SHEET

This material should be added to the National List as:

✓ Synthetic Allowed

or, ___ Non-synthetic (Allowed as an ingredient in organic food)

__ Non-synthetic (Allowed as a processing aid for organic food)

or, ___ this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List?

SELF-LIMITING

Please comment on the accuracy of the information in the file:
NOT COMPLETE ON SYNTHESIS

Any additional comments? (attachments welcomed)

BASID ON NOSB DECISION ON POTASSIUM IODIDE

ONLY IN "FOODS MADE WITH ORGANIC INGREDIENTS"

Do you have a commercial interest in this material? ___ Yes; ___ No

Signature ____________________ Date 8/28/95
Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)

(1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

(2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

(3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

(4) the effect of the substance on human health;

(5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

(6) the alternatives to using the substance in terms of practices or other available materials; and

(7) its compatibility with a system of sustainable agriculture.
Material: Vitamin E: DL-alpha tocopheryl acetate
         Mixed Tocopherols
Reviewer: Richard C. Theuer

**NATURAL & SYNTHETIC** Alpha-tocopheryl acetate is the principal commercial form of Vitamin E for food fortification, dietary supplementation and medicinals, and for domestic animals.

Concentrates of mixed tocopherols can be obtained from vegetable oils by treatment with chemicals. Inactive natural forms are converted to active forms synthetically, but are considered "natural" in the trade. Totally synthetic pure tocopherols also are commercially available.

COMMENTS RE SECTION 2119(m) CRITERIA:
Common Name: Tocopherols

Chemical Name: Tocopherol, d-mixed

Other Names: Vitamin E, Mixed tocopherol concentrate

Code #: CAS: 59-02-9; 16698-35-4; 54-28-4

Code #: Other: MSDS: yes, no

N. L. Category: Synthetic Allowed

Family: Mixed tocopherol concentrate contain a specified minimum amount of total tocopherols, differing only in levels of the d-tocopherol forms. The high-alpha type is a recognized form of vitamin E and is also an antioxidant. The low-alpha type contains more of the beta, gamma and delta forms of tocopherol and is not a vitamin but is an antioxidant. Both types may contain added vegetable oil to adjust the amount of total tocopherols.

Composition: d-a-tocopherol is a red, nearly odorless, viscous oil. Oxidizes and darkens slowly in air and on exposure to light. Insoluble in water, soluble in alcohol, and miscible with acetone, ether, and vegetable oils. Mixed tocopherols concentrate occurs as a brownish red to red, clear viscous oil with a mild, characteristic odor and taste. It oxidizes and darkens slowly in air and light. Same solubility as d-a-tocopherol.

Properties: Vacuum steam distillation of edible vegetable oil products. Gum acacia is added to dry form as a carrier.

How Made: Processing antioxidant for all food products. Dietary supplement. Natural preservative; delays onset of oxidative rancidity.

Use/Action: Conversions

Status:

OFPA

N. L. Restriction: FDA-GRAS

EPA, FDA, etc

Directions

Safety Guidelines

State Differences: Tilth approved.

Historical status

International status
NOSB Materials Database

OFPA Criteria

2119(m)1: chemical interactions  Not Applicable
2119(m)2: toxicity & persistence  Not Applicable
2119(m)3: manufacture & disposal consequences

2119(m)4: effect on human health

2119(m)5: agroecosystem biology  Not Applicable
2119(m)6: alternatives to substance

BHA, BHT, TBHQ are synthetic alternatives. Rosemary extract may be an organic alternative.

2119(m)7: Is it compatible?

References


Boyd Foster, Arrowhead Mills, 1994, written communication.
HENKEL CORPORATION  
"NATIONAL PRODUCTS GROUP  
"ERIAL SAFETY DATA SHEET # 1229 COVI-OX T-30P  
SOURCE: J. J. J.  
DATE REVISED: 8/26/93  
DATE PRINTED: 11/22/94  
HMIS RATING HEALTH 1 FLAMMABILITY 1 REACTIVITY 0 Other  
NFPA RATING HEALTH 1 FLAMMABILITY 1 REACTIVITY 0 Other  

SECTION 1 PRODUCT IDENTIFICATION  

TRADE NAME: COVI-OX T-30P  
CHEMICAL NAME: SPRAY DRIED MIXED TOCOPHEROL CONCENTRATE  
SYNONYMS: SPRAY DRIED MIXED TOCOPHEROL CONCENTRATE  
CASRN: N/A - MIXTURE  
TECHNICAL CONTACT: DR. JAMES P. CLARK  
TELEPHONE NUMBER: 708-579-6150  
EMERGENCY NUMBER: 800-424-9300  

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS  

************ EMERGENCY ************  
************ OVERVIEW ************  
LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING.  
OTHER:  
THE PRECEDING WAS ESTIMATED FROM SAFETY DATA FOR COMPONENTS.  
************ HAZARDOUS COMPONENTS **********  

CHEMICAL  
HAZARD  

NONE  

SECTION 3: HAZARDS IDENTIFICATION  

IN AND EYE CONTACT:  
MAY CAUSE EYE AND SKIN IRRITATION ON PROLONGED OR REPEATED EXPOSURE.  
PROTECT EYES, SKIN AND CLOTHING FROM CONTACT WITH PRODUCT. WASH THOROUGHLY AFTER HANDLING.  

INHALATION:  

ORAL INGESTION:  
CONSIDERED TO BE NON-TOXIC BY ANIMAL TESTS.  

ROUTES OF EXPOSURE:  
INHALATION N  
DERMAL Y  
ORAL Y  

CHRONIC EFFECTS:  

SECTION 4: FIRST AID MEASURES  

SKIN AND EYE CONTACT:  
IN CASE OF EYE OR SKIN CONTACT, FLUSH THOROUGHLY WITH PLENTY OF WATER.  

INHALATION:  

ORAL INGESTION:  
IF SWALLOWED IN LARGE QUANTITIES, GET MEDICAL ATTENTION.
SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: N/A DEG F 
TEST METHOD: N/A
LOWER FLAMMABLE LIMIT - N/D 
UPPER FLAMMABLE LIMIT - N/D

RECOMMENDED EXTINGUISHING MEDIA:
WATER SPRAY, CO2, FOAM, DRY CHEMICAL

UNUSUAL FIRE OR EXPLOSION HAZARDS (CONDITIONS TO AVOID):
NONE KNOWN TO HENKEL.

HAZARDOUS DECOMPOSITION PRODUCTS:
NONE KNOWN TO HENKEL

SPECIAL FIRE FIGHTING PROCEDURES:
NONE KNOWN TO HENKEL.

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO TAKE IF SPILLED:
PICK UP SPILLED MATERIAL AND CONTAINERIZE. VACUUM AREA OR FLUSH WITH WATER TO REMOVE RESIDUES.

SECTION 7: HANDLING AND STORAGE

STORE AWAY FROM HEAT AND DIRECT SUNLIGHT.

PROTECT FROM FREEZING.

SECTION 8: EXPOSURE CONTROLS/PERSAL PROTECTION

VENTILATION REQUIREMENTS:
NOT NECESSARY UNDER NORMAL USE CONDITIONS

PERSONAL PROTECTIVE EQUIPMENT RECOMMENDED FOR NORMAL USE CONDITIONS:
EYE PROTECTION:
SAFETY GLASSES

SKIN PROTECTION:
N/A UNDER NORMAL USE CONDITIONS

RESPIRATORY PROTECTION:
N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid
APPEARANCE: TAN POWDER
PH: N/D
BOILING POINT: N/D DEG C
MELTING POINT: ND DEG C
DENSITY: .450 GRAMS/CC
WATER MISCELLIBILITY: MODERATE - 1 TO 10 %
PERCENT VOLATILES: 0 AT 70 DEG F.
VAPOR DENSITY IS HEAVIER THAN AIR
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE: N/D MMHG
VOC CONTENT by WT. (EPA METHOD 24): N/A %

SECTION 10: STABILITY AND REACTIVITY

UNUSUAL FIRE OR EXPLOSION HAZARDS (CONDITIONS TO AVOID):
NONE KNOWN TO HENKEL.
HAZARDOUS DECOMPOSITION PRODUCTS:
NONE KNOWN TO HENKEL

SECTION 11: TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>TEST TYPE</th>
<th>RESULT TYPE</th>
<th>ANIMAL SPECIES</th>
<th>HAZARD RANK</th>
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<tbody>
<tr>
<td>DERMAL TOXICITY</td>
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<td>SLIGHT</td>
<td>COMP</td>
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<tr>
<td>EYE IRRITATION</td>
<td></td>
<td>MODERATE</td>
<td>COMP</td>
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<tr>
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<td>LC(50) - N/D</td>
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<tr>
<td>LD(50) - N/D</td>
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</tbody>
</table>

SEE SECT. 16 FOR LEGEND

SECTION 12: ECOLOGICAL INFORMATION

'D

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
THIS PRODUCT, IF DISPOSED AS SHIPPED, IS NOT A HAZARDOUS WASTE AS SPECIFIED IN 40 CFR 261. DISPOSE OF IN AN APPROVED LANDFILL IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS.

SECTION 14: TRANSPORTATION INFORMATION

DOT HAZARD CLASS:
DOT HAZARDOUS MATERIALS:
UN/NA: N/A
EMERGENCY RESPONSE GUIDE NUMBER: 00
HARMONIZE NUMBER: 2936.28.0000 3
PACKAGING GROUP: Empty

SECTION 15: REGULATORY INFORMATION

TSCA:
5(A)(2) SNUR: NONE
5(E) CONSENT ORDER: NONE
5(H)(3) R&D EXEMPT NO
SECTION 15: REGULATORY INFORMATION

8(B) INVENTORY STATUS:
THIS PRODUCT AND/OR ALL OF IT'S COMPONENTS ARE REGISTERED AS REQUIRED BY TSCL.

12(B) EXPORT NOTIFICATION:
NONE

SARA TITLE III:
302EHS:
NONE
302(CERCLA):
NONE

311/312 PRODUCT HAZARD CLASS:
ACUTE N CHRONIC N FIRE N SUDDEN RELEASE N REACTIVE N
313 TOXIC CHEMICALS:
NONE

SECTION 16: OTHER INFORMATION

N/D = NOT DETERMINED
N/A = NOT AVAILABLE
ANLG = ANALOGOUS MATERIAL
COMP = ESTIMATED FROM COMPONENTS
DILU = DILUTED PRODUCT
LITR = LITERATURE SEARCH
RMAT = RAW MATERIAL DATA
TRNO = TEST REPORT

G/KG = GRAMS PER KILOGRAM
MG/KG = MILLIGRAMS PER KILOGRAM
MG/L = MILLIGRAMS PER LITER
MG/H3 = MILLIGRAMS PER CUBIC METER
ML/KG = MILLILITERS PER KILOGRAM
PPM = PARTS PER MILLION
O-110 = SCORING RANGE
O-8 = SCORING RANGE

THE INFORMATION HEREIN RELATES TO THE PRODUCT NAMED AND IS BASED UPON
INFORMATION HENKEL CORPORATION CONSIDERS TO BE ACCURATE. NO WARRANTY EXPRESSED
OR IMPLIED IS INTENDED.
THIS INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION AND INTERPRETATION.
* IN TRADEMARK DENOTES REGISTERED TRADEMARK

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