NOSB NATIONAL LIST
FILE CHECKLIST

PROCESSING

MATERIAL NAME: # 7 Magnesium carbonate

☑ NOSB Database Form
☑ References
☑ MSDS (or equivalent)
☑ FASP (FDA)
☑ TAP Reviews from: Joe Montecalvo, Rich Theuer, Steve Taylor, Walter Jeffery

Processing - September 1996
NOSB/NATIONAL LIST
COMMENT FORM
PROCESSING

Material Name: #7 Magnesium carbonate

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: Aug. 5, 1996

Name of Material: Magnesium Carbonate

Reviewer Name: RC Thuer

RECEIVED AUG 05 1996

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

NON-SYNTHETIC

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?

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

Adequate

Any additional comments? (attachments welcomed)

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

Signature RC Thuer    Date 5 Aug 1996
Magnesium carbonate is made by the carbonation of magnesium hydroxide. Magnesium hydroxide is recovered directly from natural brines. Carbon dioxide can be considered natural. Magnesium hydroxide is natural. Therefore, magnesium carbonate is natural.

**COMMENTS RE SECTION 2119(m) CRITERIA:**

1. Magnesium is an essential nutrient for man and other animals.
2. Magnesium carbonate is not strongly caustic. Normal precautions to avoid contact with chemicals should be taken.
3. Magnesium carbonate has a variety of uses. Alternatives may exist for some, but not all alternative will be natural.
4. The fact that the key raw material magnesium hydroxide is produced from brine minimizes the environmental impact of magnesium carbonate manufacture and makes it more compatible with long-term sustainability.

The following natural substance should be allowed as an ingredient in organic foods. It should not be added to the National List of natural substances prohibited for use as ingredients or processing aids in Organic Food:

magnesium carbonate.

18 Feb 1995
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: Aug. 5, 1996

Name of Material: Magnesium Carbonate

Reviewer Name: Steve L. Taylor RECEIVED AUG 05 1996

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

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

Don't know how this is extracted so will abstain

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?

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

Any additional comments? (attachments welcomed)

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

Signature Steve L. Taylor  Date 8/5/96
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;

None

(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;

None

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

None

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

None

(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: Aug. 5, 1996

Name of Material: Magnesium Carbonate

Reviewer Name: WALTER JEFFERY RECEIVED JUL 2 9 1996

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) As the double salt, also on occasion by calcining dolomite.

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?

No

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

Any additional comments? (attachments welcomed)

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

Signature WALTER JEFFERY Date 7/23/96
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;
   none - it's pretty unreactive except with acids.

(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;
   minimal toxic effects

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

(4) the effect of the substance on human health;
   magnesium is an essential element

(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;
   low

(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.
   ok in processing use
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: Aug. 5, 1996

Name of Material: Magnesium Carbonate
Reviewer Name: Joe Montecalvo

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)
- Another method - By mixing solutions of Magnesium Sulfate and Sodium Carbonate, heating and drying

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 to be used as a drying agent, color retention agent or anti-caking agent (major use in Free-running Salts [ie comminutable Salts])

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

- Partial

Any additional comments? [attachments welcomed]

- None

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

Signature: [Signature]
Date: 7/26/96
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;

NONE

(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;

NONE

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

NONE

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

USED AS AN ANTACID, OR A LAXATIVE IN VETERINARY APPLICATIONS AS A LAXATIVE

(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;

NONE

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

NONE - BUT SIO2 ARE AN ANTICKINKY COMPOUND.

(7) its compatibility with a system of sustainable agriculture.

OK
NOSB Materials Database

Identification

Common Name: Magnesium carbonate

Other Names: Reg. No. 546-93-0

Code #: CAS: Synthetic Allowed

Family

Composition: 4MgCO₃Mg(OH)₂.5H₂O

Properties: Light, white friable masses or bulky white powder. Odorless and stable in air. Practically insoluble in water. Insoluble in alcohol, but is dissolved by dilute acids with effervescence.

How Made: Carbonation (with carbon dioxide) of magnesium hydroxide. Mg hydroxide is made by recovery from natural brines.

G-RADES: Technical, N. F. (National Formulary) i.e, Pharmaceutical Application.

Type of Use: Processing

Use/Action

Specific Use(s): Alkali; drying agent; color-retention agent; anticaking agent; carrier.

Action

Combinations

Status

OFPA

N. L. Restriction

EPA, FDA, etc

Directions

Safety Guidelines

- Historical status
- International status: Allowed by EU and Codex.
Material: Magnesium carbonate

Reviewer: Bob Durst

Is this substance Natural or Synthetic? Explain (if appropriate)

Synthetic.

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

The file is accurate.

This material should be added to the National List as:

- X Synthetic Allowed,
- ___ Prohibited Natural, or
- ___ This material does not belong on the National List because: could be excluded as most of its uses are either cosmetic or could be replaced with another compound.

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

Must be listed on the ingredient label.

Any additional comments or references?

There are other anti-caking agents (talc), other alkalai (sodium and potassium carbonates, or calcium hydroxide) and other compounds that are drying agents. Its use for color enhancement in green beans could better be done with MgCl or better yet for organics, done without.

As with all synthetic inorganic salts, source must be food grade. In addition each lot should be analyzed for toxic element concentrations (mercury, lead, cadmium, arsenic, thallium and antimony) and a near zero tolerance adopted.

Signature: [Signature]

Date: 3/11/95
**Identification**

Common Name: Magnesium carbonate  
Chemical Name:  

Other Names:  

Code #: CAS: Reg. No. 546-93-0  
N. L. Category: Synthetic Allowed  

Code #: Other  
MSDS: ☑ yes  ☐ no  

**Family**

Composition: 4MgCO₃·Mg(OH)₂·5H₂O  

Properties: Light, white friable masses or bulky white powder. Odorless and stable in air. Practically insoluble in water. Insoluble in alcohol, but is dissolved by dilute acids with effervescence.  

How Made: Carbonation (with carbon dioxide) of magnesium hydroxide. Mg hydroxide is made by recovery from natural brines.  

**Type of Use**  
Processing  

**Use/Action**  
Specific Use(s): Alkali; drying agent; color-retention agent; anticaking agent; carrier.  
Action:  
Combinations:  

**Status**  
OFPA  
N. L. Restriction  
EPA, FDA, etc  
Directions  
Safety Guidelines  
Historical status:  
International status: Allowed by EU and Codex.
2119(m)1: chemical interactions

2119(m)2: toxicity & persistence

2119(m)3: manufacture & disposal consequences

2119(m)4: effect on human health
Magnesium is an essential nutrient.

2119(m)5: agroecosystem biology

2119(m)6: alternatives to substance
anti-caking: talc; alkali: sodium or potassium carbonates, or calcium hydroxide; color enhancement: magnesium chloride or none.

2119(m)7: Is it compatible?

References

AU: Clydesdale,-F-M; Goodman,-A-W; Francis,-F-J
TI: The effect of a phosphate buffer and magnesium carbonate on quality attributes of cooked green vegetables
CN: DNAL 44.8-J824

AU: Fleischman,-D-L; Clydesdale,-F-M; Francis,-F-J
TI: Effect of magnesium carbonate and sodium phosphate on the extraction of chlorophyll-like pigments after thermal processing of spinach puree
CN: DNAL 44.8-J824
MATERIAL SAFETY DATA SHEET
MAGNESIUM CARBONATE

SECTION I - Product Identification

PRODUCT NAME: MAGNESIUM CARBONATE
FORMULA: 4MGlCO3.MGlO(H12.5H2O
FORMULA WT: 485.74
CAS NO.: N/A
COMMON SYNONYMS: N/A

Precautionary Labeling

N/A

SECTION II - Hazardous Components

N/A

SECTION III - Physical Data

BOILING POINT: N/A  VAPOR PRESSURE @ 20C (MM HG): N/A
MELTING POINT: N/A  VAPOR DENSITY (AIR=1): N/A
SPECIFIC GRAVITY: 2.16  EVAPORATION RATE: N/A
(H2O=1)  (BUTYL ACETATE=1)
SOLUBILITY(H2O): 0.04  PERCENT VOLATILES BY VOLUME: N/A
APPEARANCE & ODOR: COLORLESS TO WHITE CRYSTALS

SECTION IV - Fire and Explosion Hazard Data

FLASH POINT: NONFLAMMABLE
FLAMMABLE LIMITS: UPPER - N/A %  LOWER - N/A %
FIRE EXTINGUISHING MEDIA
   ANY SUITABLE FOR OTHER MATERIALS INVOLVED
SPECIAL FIRE-FIGHTING PROCEDURES
   WEAR SELF-CONTAINED BREATHING APPARATUS
UNUSUAL FIRE AND EXPLOSION HAZARDS
   NONE

SECTION V - Health Hazard Data

THRESHOLD LIMIT VALUE (TLV/TWA): NONE ESTABLISHED
EFFECTS OF OVEREXPOSURE
   PROLONGED CONTACT AND ACUTE INGESTION MAY RESULT IN ALLERGIC REACTION
EMERGENCY AND FIRST AID PROCEDURES
   EYES: WASH WITH WATER 15 MINUTES; GET MEDICAL ASSISTANCE
   SKIN: WASH WITH SOAP/WATER; GET MEDICAL ASSISTANCE
   INGESTION: GET MEDICAL ATTENTION
   INHALATION: REMOVE TO FRESH AIR; GET MEDICAL ASSISTANCE

SECTION VI - Reactivity Data

STABILITY: STABLE
CONDITIONS TO AVOID: NONE
INCOMPATIBILITIES: ACIDS, OXIDIZERS, CYANIDES, HALOGENS, HALOGEN
COMPUNDS OXIDIZING MATERIALS (REACTS VIGOROUSLY)
DECOMPOSITION PRODUCTS: CO2 MGO

SECTION VII - Spill and Disposal Procedures
STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
SWEEP UP & CONTAINERIZE FOR DISPOSAL

SECTION VIII - Protective Equipment

PROVIDE ADEQUATE GENERAL MECHANICAL VENTILATION
PROTECT EYES AND SKIN WITH SAFETY GOGGLES AND GLOVES
DO NOT BREATHE DUST
DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING

SECTION IX - Storage and Handling Precautions

KEEP CONTAINER CLOSED
STORE IN A COOL, DRY, WELL-VENTILATED AREA
WASH THOROUGHLY AFTER HANDLING

SECTION X - Transportation Data and Additional Information

NONE

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N/A = Not Applicable OR Not Available
The information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user’s responsibility to determine the suitability of this information for adoption of necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.
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U.S. FOOD AND DRUG ADMINISTRATION
FOOD ADDITIVE SAFETY PROFILE

MAGNESIUM CARBONATE

S#: 019409820
SP#: 7323
PE: NEW
S#: 0110

HUMAN CONSUMPTION: 0.2090 MG/KG BW/DAY/PERSON
MARKET DISAPPEARANCE: 246666.666 LBS/YR
MARKET SURVEY: 87
JECFA: NL

MA#: JECFA ADI: MG/KG BW/DAY/PERSON
CECFA ESTABLISHED: 1965
LAST UPDATE: 930115

STRUCTURE CATEGORIES: A7

COMPONENTS:

NONYMS: CARBONIC ACID, MAGNESIUM SALT (1:1), MIXT. WITH MAGNESIUM HYDROXIDE (Mg(OH)2), HYDRATE

CHEMICAL FUNCTION: G

TECHNICAL EFFECT: ANTIACKING AGENT OR FREE-FLOW AGENT
DRYING AGENT
HUMECTANT
PROCESSING AID
NUTRIENT SUPPLEMENT
FORMULATION AID
PH CONTROL AGENT
FLAVOR ENHANCER
FLAVORING AGENT OR ADJUVANT
LUBRICANT OR RELEASE AGENT

REG NUMBERS: 184.1425 163.110 133.102
137.105 133.106 133.111
133.141 133.165 133.181
133.183 133.195 137.155
137.165 137.160 137.170
137.175 137.180 137.185

MINIMUM TESTING LEVEL: 3

NOTES: NO TOX DATA IN SCOGS-60

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