

# 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

**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:**

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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: R. C. 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 R. C. Thuer Date 5 AUG 1996

USDA/TAP REVIEWER  
COMMENT FORM

Original mailing date: 6 Feb 1995.

Name of Material: Magnesium Carbonate  
Reviewer Name: Richard C. Theuer

**NATURAL** 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

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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;  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 29 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 database states. 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 - its pretty unreactive except with acids.*

NEW P & M DIVISION

- (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*



# 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: JOE MONTECALVO RECEIVED AUG 05 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) - Another Method - By mixing solutions of Magnesium Sulfate and Sodium Carbonate, filtering 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 anticaking agent (major use in Free-Running Salts like commontable 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 Dr. Joe Montecalvo

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 ANT ACID, CATHARTIC, 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  $\text{SiO}_2$  AS AN ANTICAKING compound.

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

O.K.

# NOSB Materials Database

1

## Identification

Common Name **Magnesium carbonate** Chemical Name  
Other Names  
Code #: CAS Reg. No. 546-93-0 Code #: Other  
N. L. Category Synthetic Allowed MSDS  yes  no

## Chemistry

Family  
Composition  $4\text{MgCO}_3 \cdot \text{Mg}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$   
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.  
*GRADES; technical, N. F. (National Formulary) i.e. Pharmaceutical Applications*

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.

# USDA/TAP Reviewer Comment Form

2.

Material: Magnesium carbonate

Reviewer: Bob Durst

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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:

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?

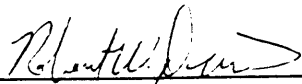
Must be listed on the ingredient label.

Any additional comments or references?

There are other anti-caking agents (talc), other alkalis (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



Date

3/11/95

# NOSB Materials Database

1

## Identification

Common Name **Magnesium carbonate** Chemical Name  
Other Names  
Code #: CAS Reg. No. 546-93-0 Code #: Other  
N. L. Category Synthetic Allowed MSDS  yes  no

## Chemistry

Family  
Composition  $4\text{MgCO}_3 \cdot \text{Mg}(\text{OH})_2 \cdot 5\text{H}_2\text{O}$   
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.

# NOSB Materials Database

## OFPA Criteria

2

**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

SO: J-Milk-Food-Technol, Feb 1971, 34 (2): 78-81.

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

SO: J-Milk-Food-Technol, Oct 1970, 33 (10): 456-459.

CN: DNAL 44.8-J824

# MATERIAL SAFETY DATA SHEET

## MAGNESIUM CARBONATE

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### SECTION I - Product Identification

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PRODUCT NAME: MAGNESIUM CARBONATE  
FORMULA: 4MGCO3.MG(OH)2.5H2O  
FORMULA WT: 485.74  
CAS NO.:  
COMMON SYNONYMS: N/A

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### Precautionary Labeling

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N/A

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### SECTION II - Hazardous Components

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N/A

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### SECTION III - Physical Data

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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

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### SECTION IV - Fire and Explosion Hazard Data

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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

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### SECTION V - Health Hazard Data

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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

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### SECTION VI - Reactivity Data

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STABILITY: STABLE  
CONDITIONS TO AVOID: NONE  
INCOMPATIBLES: ACIDS, OXIDIZERS, CYANIDES, HALOGENS, HALOGEN

COMPOUNDS OXIDIZING MATERIALS (REACTS VIGOROUSLY)  
DECOMPOSITION PRODUCTS: CO2 MGO

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**SECTION VII - Spill and Disposal Procedures**

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STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE  
SWEEP UP & CONTAINERIZE FOR DISPOSAL

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**SECTION VIII - Protective Equipment**

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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

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**SECTION IX - Storage and Handling Precautions**

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

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**SECTION X - Transportation Data and Additional Information**

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NONE

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(TM) and (R) : Registered Trademarks

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#:	039409820	HUMAN CONSUMPTION:	0.2090	MG/KG BW/DAY/PERSON
.SP#:	2323	MARKET DISAPPEARANCE:	246666.666	LBS/YR
.PE:	NEW	MARKET SURVEY:	87	
.S#:	0110	JECFA:	NL	
.MA#:		JECFA ADI:	1965	MG/KG BW/DAY/PERSON
.AS#:		JECFA ESTABLISHED:	930115	
		LAST UPDATE:		
		DENSITY:		
		LOGP:		

STRUCTURE CATEGORIES: A7

COMPONENTS:

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

CHEMICAL FUNCTION: G

TECHNICAL EFFECT:

- ANTICAKING 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

REMARKS: NO TOX DATA IN SCOGS-60

