NOSB NATIONAL LIST
FILE CHECKLIST

PROCESSING

MATERIAL NAME: **#13 Magnesium Chloride**

✓	**NOSB Database Form**
✓	**References**
✓	**MSDS (or equivalent)**
✓	**FASP (FDA)**
✓	**TAP Reviews from:** **Joe Montecalvo, Rich Theuer**

NOSB/NATIONAL LIST
COMMENT FORM
PROCESSING

Material Name: #13 Magnesium Chloride

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: August 29, 1995

Name of Material: Magnesium chloride

Reviewer Name: DR. 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)

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 for specified Specific uses

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

Any additional comments? (attachments welcomed)

- Also it is used for Fireproofing wood, in disinfectants, Fire Extinguishers, dressing Cotton Fibers / Fabrics, Carbonizing wool, Artificial leather, in casein glues, As a Reagent in ~~Her~~ Analytical chemistry.

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

Signature [signature] **Date** 7/31/95

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;

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 known.

(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;

Will Act As A Cathartic

(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

Not Known.

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

~~Other~~ Only for specific usec./Applications

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: Magnesium chloride

Reviewer Name: R THELER

Is this substance Synthetic or non-synthetic? Explain (if appropriate) SYNTHETIC (OR) NON-SYNTHETIC (FROM BRINE)

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?

FROM NATURAL SOURCE (NON-SYNTHETIC)

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

GOOD

Any additional comments? (attachments welcomed)

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.

NOSB Materials Database

Identification

Common Name **Magnesium chloride** **Chemical Name**

Other Names

Code #: CAS **Code #: Other**

N. L. Category Synthetic Allowed **MSDS** ◉ yes ○ no

Chemistry

Family

Composition $MgCl_2.6H_2O$

Properties Colorless, odorless flakes or crystals. Very deliquescent. Very soluble in water and freely soluble in alcohol.

How Made Magnesium oxide, coarbonate or hydroxide is dissolved in hydrochloric acid and cooled to recover the magnesium cloride. It is manufactured as a by-product of the potash industry, from natural brines, from seawater, and in the presence of an organic reducing agent. Recovery from brines and from potash manufacture is achieved by concentration the liquor by solar evaporation and then fractional crystallization of other salts.

Use/Action

Type of Use Processing

Specific Use(s) color retention agent; firming agent for tofu. Also used in sugar beet processing.

Action

Combinations

Status

OFPA

N. L. Restriction

EPA, FDA, etc FDA-GRAS

Directions

Safety Guidelines

State Differences

Historical status

Internationl status

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

2119(m)7: Is it compatible?

References

Kirk-Othmer Encyclopedia of Chemical Technology, 3rd. edition, 1982. John Wiley & Sons.

MSDS for MAGNESIUM CHLORIDE, 6-HYDRATE, CRYSTAL

1 - PRODUCT IDENTIFICATION

PRODUCT NAME: MAGNESIUM CHLORIDE, 6-HYDRATE, CRYSTAL
FORMULA: MGCL2 6H2O FORMULA WT: 203.30
CAS NO.: 7791-18-6 NIOSH/RTECS NO.: OM2975000
PRODUCT CODES: 2448,2444,5183
EFFECTIVE: 11/05/86 REVISION #02
PRECAUTIONARY LABELLING
BAKER SAF-T-DATA(TM) SYSTEM
HEALTH - 1 SLIGHT
FLAMMABILITY - 0 NONE
REACTIVITY - 1 SLIGHT
CONTACT - 1 SLIGHT
HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).
LABORATORY PROTECTIVE EQUIPMENT: SAFETY GLASSES; LAB COAT
PRECAUTIONARY LABEL STATEMENTS
CAUTION MAY CAUSE IRRITATION
MAY BE HARMFUL IF SWALLOWED
DURING USE AVOID CONTACT WITH EYES, SKIN, CLOTHING. WASH THOROUGHLY AFTER HANDLING. WHEN NOT IN USE KEEP IN TIGHTLY CLOSED CONTAINER.
SAF-T-DATA(TM) STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)

2 - HAZARDOUS COMPONENTS

COMPONENT	%	CAS NO.
NOT APPLICABLE		

3 - PHYSICAL DATA

BOILING POINT: N/A VAPOR PRESSURE(MM HG): N/A
MELTING POINT: 118 C (244 F) VAPOR DENSITY(AIR=1): N/A
SPECIFIC GRAVITY: 1.56 EVAPORATION RATE: N/A
(H2O=1) (BUTYL ACETATE=1)
SOLUBILITY(H2O): APPRECIABLE (MORE THAN 10 %) % VOLATILES BY VOLUME: 0
APPEARANCE & ODOR: WHITE DELIQUESCENT CRYSTALS.

4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP N/A
FLAMMABLE LIMITS: UPPER - N/A % LOWER - N/A %
FIRE EXTINGUISHING MEDIA
USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.
SPECIAL FIRE-FIGHTING PROCEDURES
FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE.
TOXIC GASES PRODUCED: CHLORINE, HYDROGEN CHLORIDE

5 - HEALTH HAZARD DATA

TOXICITY: LD50 (ORAL-RAT)(MG/KG) - 8100

LD50 (ORAL-MOUSE)(MG/KG) - 7600
LD50 (IPR-MOUSE)(MG/KG) - 775
CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO
EFFECTS OF OVEREXPOSURE
DUST MAY BE IRRITATING TO EYES, NOSE, THROAT, OR LUNGS.
INGESTION MAY CAUSE GASTROINTESTINAL PAIN.
TARGET ORGANS: EYES, SKIN
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE IDENTIFIED
ROUTES OF ENTRY: EYE CONTACT, SKIN CONTACT, INGESTION, INHALATION
EMERGENCY AND FIRST AID PROCEDURES
INGESTION: IF SWALLOWED AND THE PERSON IS CONSCIOUS, IMMEDIATELY GIVE LARGE AMOUNTS OF WATER. GET MEDICAL ATTENTION.
INHALATION: IF A PERSON BREATHES IN LARGE AMOUNTS, MOVE THE EXPOSED PERSON TO FRESH AIR. GET MEDICAL ATTENTION.
EYE CONTACT: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.
SKIN CONTACT: IMMEDIATELY WASH WITH PLENTY OF SOAP AND WATER FOR AT LEAST 15 MINUTES.

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6 - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR
CONDITIONS TO AVOID: MOISTURE
INCOMPATIBLES: MOST COMMON METALS, STRONG OXIDIZING AGENTS
DECOMPOSITION PRODUCTS: HYDROGEN CHLORIDE, CHLORINE

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7 - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE
WEAR SUITABLE PROTECTIVE CLOTHING. CAREFULLY SWEEP UP AND REMOVE.
DISPOSAL PROCEDURE
DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

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8 - PROTECTIVE EQUIPMENT

VENTILATION: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION TO KEEP FUME OR DUST LEVELS AS LOW AS POSSIBLE.
RESPIRATORY PROTECTION: NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS EXIST. IF AIRBORNE CONCENTRATION IS HIGH, USE AN APPROPRIATE RESPIRATOR OR DUST MASK.
EYE/SKIN PROTECTION: SAFETY GLASSES WITH SIDESHIELDS, RUBBER GLOVES ARE RECOMMENDED.

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9 - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA(TM) STORAGE COLOR CODE: ORANGE (GENERAL STORAGE)
SPECIAL PRECAUTIONS
KEEP CONTAINER TIGHTLY CLOSED. SUITABLE FOR ANY CHEMICAL STORAGE AREA.

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10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)
PROPER SHIPPING NAME CHEMICALS, N.O.S. (NON-REGULATED)
INTERNATIONAL (I.M.O.)
PROPER SHIPPING NAME CHEMICALS, N.O.S. (NON-REGULATED)

DOCNUM=2324

U.S. FOOD AND DRUG ADMINISTRATION
FOOD ADDITIVE SAFETY PROFILE

MAGNESIUM CHLORIDE

CAS#:	007786303	HUMAN CONSUMPTION:	0.7471	MG/KG BW/DAY/PERSON
FASP#:	2324	MARKET DISAPPEARANCE:	881666.666	LBS/YR
TYPE:	NEW	MARKET SURVEY:	87	
NAS#:	0387	JECFA:	NL-C	
FEMA#:		JECFA ADI:		MG/KG BW/DAY/PERSON
GRAS#:		JECFA ESTABLISHED:	1979	
		LAST UPDATE:	920415	
FW:	203.2	DENSITY:	LOGP:	

STRUCTURE CATEGORIES: A7

COMPONENTS:

SYNONYMS:
MAGNESIUM CHLORIDE, ANHYDROUS
MAGNESIUM DICHLORIDE
MAGNESIUM CHLORIDE (MGCL2)

CHEMICAL FUNCTION: D

TECHNICAL EFFECT:
NUTRIENT SUPPLEMENT
COLOR OR COLORING ADJUNCT
FIRMING AGENT
FLAVORING AGENT OR ADJUVANT

CFR REG NUMBERS: 184.1426 172.560

MINIMUM TESTING LEVEL: 3

COMMENTS: NO TOX STUDIES FROM SCOGS-60

BOX 4A: LOWEST EFFECT LEVEL OBSERVED IN ALL AVAILABLE RAT OR MOUSE STUDIES

STUDY: COMPLETENESS: RANKING FACTOR: 0.000E0
SPECIES: LEL: MG/KG BW/DAY
EFFECTS:
SITES:
COMMENTS:

BOX 9: ORAL TOXICITY STUDIES (OTHER THAN ACUTE)

DOCNUM=2324

STUDY: 10 COMPLETENESS: B SOURCE: FOOD CHEM TOXICOL 27:559-563
TYPE: CHRONIC RODENT YEAR: 1989
SPECIES: MOUSE LEL: 1840 MG/KG BW/DAY
DURATION: 672 DAYS HNEL: 342 MG/KG BW/DAY
EFFECTS: BODY WEIGHT DECREASE
FOOD CONSUMPTION INCREASE
WATER INTAKE INCREASE
SITES:
COMMENTS: ALL EFFECTS IN FEMALES
MALE DOSE LEVELS: 0, 267, 1316 MG/KG
FEMALE DOSE LEVELS: 0, 342, 1840 MG/KG

STUDY: 10 COMPLETENESS: B SOURCE: FOOD CHEM TOXICOL 27:559-563
TYPE: RODENT (NON-RAT) ONCOGENICITY YEAR: 1989
SPECIES: MOUSE LEL: 1840 MG/KG BW/DAY
DURATION: 672 DAYS HNEL: 342 MG/KG BW/DAY
EFFECTS: BODY WEIGHT DECREASE
FOOD CONSUMPTION INCREASE
WATER INTAKE INCREASE
SITES:
COMMENTS: ALL EFFECTS IN FEMALES
MALE DOSE LEVELS: 0, 267, 1316 MG/KG
FEMALE DOSE LEVELS: 0,342, 1840 MG/KG

BOX 3: GENETIC TOXICITY STUDIES

STUDY: 2 COMPLETENESS: SOURCE:
TYPE: YEAR:
SPECIES: LEL: MG/KG BW/DAY
DURATION: HNEL:
EFFECTS:
CELLS:
COMMENTS:

STUDY: 3 COMPLETENESS: SOURCE:
TYPE: YEAR:
SPECIES: LEL: MG/KG BW/DAY
DURATION: HNEL:
EFFECTS:
CELLS:
COMMENTS:

STUDY: 4 COMPLETENESS: SOURCE:
TYPE: YEAR:
SPECIES: LEL: MG/KG BW/DAY