



December 9, 2021

SAFETY DATA SHEET

Dried Magnesium Limestone (Animal Feed Ingredient)

(As prescribed by OSHA, 29 CFR 1910.1200(g) and Appendix D)

(Details of the abbreviations are on pages 5 and 10)

Section 1: Identification

- **Product identifier used on the label and any other common names or synonyms by which the substance is known.**

NLS Products: NatMag99® – Magnesium Limestone, NatMag99®, NatMag, NatMag99® Fine, NatMag 99® Granular, NatFeed®, NMAG99, NMAG-F, NM99F5, NM99FB, 30, 40, 80.
(Note: BB in the product code signifies packaged in Bulk Bag)
(Note: 50 in the product code signifies packaged in 50 pound bag)

- **Name, address, phone number of the manufacturer, importer, or other responsible party, and emergency phone number.**

Manufactured By: The National Lime & Stone Co.

Corporate Office: 551 Lake Cascade Parkway, PO Box 120, Findlay, OH 45840

Manufacturing Plant: 370 North Patterson St., Carey, OH 43326

Phone: 419-422-4341 Emergency Phone: 419-396-7671

- **Recommended use of the chemical:** Animal Feed Ingredient.
- **Recommended restrictions on use of the chemical:** Extensive dust control measures required if contemplated for use as abrasive blasting agent.

Section 2: Hazard(s) Identification

Physical Hazards: Not classified.

The hazards below apply to dust generated from handling or processing.

Inhalation: Acute (immediate) - Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion and drying. Coughing, sneezing, shortness of breath may occur.

Inhalation: Chronic - Long term exposure to crystalline silica may cause a chronic lung disease, silicosis. Respirable Crystalline Silica (RCS) may cause cancer. Limestone is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, limestone is not a known health hazard. Limestone may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain RCS (Respirable crystalline silica particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of RCS (quartz) may cause lung cancer according to IARC and NTP; ACGIH® states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Section 2 Hazard(s) Identification Continued

Eye contact: Acute - Dust particles can scratch the eye causing tearing, redness, a stinging or burning feeling, or swelling of the eyes with blurred vision. Chronic – no known effects.

Skin contact: Acute - Dust particles can scratch and irritate the skin with redness, and itching or burning feeling, swelling or the skin, and / or rash. Chronic – no known effects.

Ingestion: Expected to be practically non-toxic. Acute - Ingestion of large amounts may cause gastrointestinal irritation including nausea, vomiting, diarrhea, and blockage. Chronic – no known effects.

Hazard category (Inhalation) for:

- Carcinogen: Category 1A (see 29 CFR 1910.1200 Appendix A.6)
- Specific Target Organ Toxicity – Repeated Exposure (lungs, respiratory system) – Category 2 (see 29 CFR 1910.1200 Appendix A.9)

▪ **Signal word:** Danger

▪ **Hazard statements:**

May cause cancer. May cause damage to organs (lung) through prolonged or repeated exposure.

NFPA Hazard Class Health: 1 Flammability: 0 Reactivity: 0

HMIS Hazard Class Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: E

Hazards Not Otherwise Classified (HNOC) – None Known

▪ **Pictograms:**



- **Precautionary statements:** Do not handle until all safety precautions have been read and understood.

Respiration protection: NIOSH-MSHA approved dust respirators for conditions where dust levels may exceed exposure limits.

Ventilation: As required to maintain exposures below PEL's, REL's and TLV®'s. Vent dust to collector.

Eye protection: Dust goggles should be worn when visibly dusty conditions exist.

Storage: Restrict or control access to stockpile areas. Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.

Disposal: Dispose of contents/container in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

Section 3: Composition/Information on Ingredients

Components	Formula	CAS No.	Weight %
Magnesium Limestone (Dolomite)	CaCO ₃ ·MgCO ₃	16389-88-1	97+
Silicon Dioxide (Quartz)	SiO ₂	14808-60-7	>0.1%
Other Trace Elements	N/A	NA	<3%

Trade Name & Synonyms: NatFeed[®], NatMag 99[®], Magnesium Limestone, Dolomitic Limestone
 Chemical Family: Alkaline Earth Carbonate

Section 4: First-Aid Measures

• **Necessary first-aid instructions by relevant routes of exposure:**

Inhalation: Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact physician if irritation persists or if breathing is difficult.

Skin: Wash affected areas thoroughly with mild soap and fresh water. Contact physician if irritation persists or later develops.

Eyes: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.

Ingestion: If person is conscious, do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See also Section (2) of this SDS - Hazards(s) Identification

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media – Limestone is not flammable. Limestone dust is not a combustible. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media - Do not use water jet stream that may cause a dust cloud.

Special protective equipment and precautions for firefighters – Use protective equipment appropriate for combustion of surrounding materials.

Firefighting equipment/instructions - No specific precautions.

Specific hazards that develop from the material during the fire:

Flash point – Non Flammable; Auto-ignition Temperature – Non-Flammable

Unusual fire and explosion hazards:

Contact with powerful oxidizing agents may cause fire and/or explosions. (See section 10 of this SDS.)

When heated at 1700°F or more for prolonged periods, dolomitic limestone decomposes into dolomitic quicklime (CaOMgO) releasing carbon dioxide (decomposition can begin at 1100°F). Dolomitic quicklime generates heat (and potentially steam) when exposed to water.

Section 6: Accidental Release Measures

▪ **Cleanup procedures :**

Spilled materials, where dust is generated, may overexpose clean-up personnel to respirable dust. Use of respiratory protective equipment may be necessary. Do not dry sweep or use compressed air for clean-up. Dolomitic limestone may be wetted with water to control dusting. Prevent spilled materials from entering streams, drains, or sewers.

Waste disposal method: Pick up and reuse clean materials. Dispose of waste materials in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

Section 7: Handling and Storage

▪ **Precautions for safe handling:**

Do not handle until all safety precautions have been read and understood.

Keep formation of airborne dusts to a minimum. Do not breathe dust.

Provide appropriate exhaust ventilation at places where dust is formed. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Bulk density can exceed 120 pounds per cubic foot. Verify storage structures (bins, silos, etc.) have sufficient strength to contain the material. Stack bagged material in a secure manner to prevent falling.

Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains limestone. Dust can build up or adhere to the walls of a confined space and release, collapse, or fall unexpectedly. Do not stand on or near stockpiles of limestone; they may be unstable.

▪ **Recommendations on the conditions for safe storage:**

May cause pitting of aluminum. Ignites on contact with fluorine and other strong oxidizing agents and is incompatible with acids, ammonium salts, and magnesium metal.

Section 8: Exposure, Controls, Personal Protection

Exposure limits vary with the % quartz dust. Refer to OSHA, NIOSH, ACGIH® and MSHA for current applicable exposure limits.

Selected Occupational Exposure Limits (August 29, 2019).	All values for mg/m3 for 8 hour TWA (except NIOSH REL is up to 10 hour TWA)				
Substance	REGULATORY			RECOMMENDED	
	OSHA PEL	MSHA PEL	Cal/OSHA PEL	ACGIH® TLV®	NIOSH REL
Magnesium Limestone (Ca and Mg Carbonates)	15 (T) 5 (R)	10 (T)	10 (T) 5 (R)	**	10 (T) 5 (R)
Respirable dust containing crystalline silica.	---	10mg/m3 ÷ (% RQ + 2) (See Note Below)	---	**	---
Respirable Crystalline Silica (Including Tridymite, Cristobalite and other forms of respirable silica)	0.05 (PEL) 0.025 (Action Level)	---	0.05	**	0.05
Airborne OEL's for Inert/Nuisance Dust (PNOS)	15 (T) 5 (R)	10 (T)	10 (T) 5 (R)	**	---

NOTE: The MSHA PEL for dust containing respirable silica as tridymite and cristobalite is one-half the MSHA PEL for respirable dust containing silica as quartz.

References: OSHA & Cal-OSHA PEL's, and NIOSH REL's are taken from OSHA Annotated Z-1 and Z-3 (<https://www.osha.gov/dsg/annotated-pels/index.html>) (except OSHA respirable silica PEL is the 2016 updated value (information at https://www.osha.gov/silica/Silica_FAQs_2016-3-22.pdf)).
MSHA data from <https://www.kapa-krmca.org/Resources/Documents/Education/KAPA/LimestoneMSDS.pdf> and <https://www.federalregister.gov/documents/2019/08/29/2019-18478/respirable-silica-quartz>.
** Check for most recent ACGIH® TLVs® and BEIs®.

Abbreviations:					
T = Total Dust					
R = Respirable Fraction					
RQ = Respirable Quartz					
ACGIH® = American Conference of Governmental Industrial Hygienists					
ACGIH® TLV® = Threshold Limit Value					
Cal/OSHA - California Division of Occupational Safety and Health					
mg/m3 = milligrams per cubic meter of air					
NIOSH = National Institute for Occupational Safety and Health					
NIOSH REL = Recommended Exposure Limit					
MSHA = Mine Safety and Health Administration					
OSHA = Occupational Safety and Health Administration					
OSHA PEL = Permissible Exposure Limit					
OEL = Occupational Exposure Limit					
TWA = Time Weighted Average					
PNOS - Particles Not Otherwise Specified (or regulated)					

Section 8 Exposure, Controls, Personal Protection Continued

Appropriate engineering controls: Use ventilation and dust collection to control exposure to below applicable limits.

Recommendations for personal protective measures: Respirable dust and quartz levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Any special requirements for PPE:

Eye protection: Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visibly) dusty conditions are present or anticipated.

Skin protection: Use gloves to provide hand protection from abrasion. In dusty conditions wear long sleeve shirt. Wash work clothes after each use.

Respiratory Protection: All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance, and other.

Section 9: Physical and Chemical Properties

(a) Appearance (physical state, color, etc.) - Angular gray, white, and tan solid particles ranging in size from powder to about 8 mesh (a square mesh sieve with opening of about 0.094 inches).

(b) Odor - No Odor

(c) Odor threshold - NA

(d) pH – 9.4 in saturated water solution

(e) Melting point/freezing point - NA

(f) Initial boiling point and boiling range - NA

(g) Flash point – Not Flammable

(h) Evaporation rate – NA

(i) Flammability (solid, gas) - Not flammable

(j) Upper/lower flammability or explosive limits – Not Flammable.

(k) Vapor pressure - NA

(l) Vapor density - NA

(m) Relative density - Ranges between 60 and 125 pounds per cubic foot

(n) Solubility(ies) – Negligible in water.

(o) Partition coefficient: n-octanol/water – NA.

(p) Auto-ignition temperature – Not Flammable.

(q) Decomposition temperature - When heated at 1100 - 1700°F, dolomitic limestone decomposes into dolomitic quicklime releasing carbon dioxide gas.

(r) Viscosity – NA

Section 10: Stability and Reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage, and transport

Chemical Stability: Reacts with acids evolving CO₂ gas. Stable if no acids or strong oxidizing agents are present.

Possibility of Hazardous Reactions: Do not expose to acids or strong oxidizing agents.

Conditions to Avoid: Do not expose to acids or strong oxidizing agents.

Incompatible Materials: Ignites on contact with fluorine and other strong oxidizing agents and is incompatible with acids, ammonium salts, and magnesium metal. May cause pitting of aluminum.

Hazardous polymerization: Will not occur.

Hazardous decomposition products: When heated at 1100 - 1700°F, dolomitic limestone decomposes into dolomitic quicklime releasing carbon dioxide gas.

Section 11: Toxicological Information

Inhalation Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer.

Skin contact Limestone dust: May cause irritation through mechanical abrasion.

Eye contact Limestone dust: May cause irritation through mechanical abrasion.

Ingestion Not likely, due to the form of the product. However, accidental ingestion of the content may cause discomfort.

Symptoms related to the physical, chemical, and toxicological characteristics: Limestone dust: Discomfort in the chest. Shortness of breath. Coughing.

Information on toxicological effects: (See <https://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf>)

Acute toxicity - Not expected to be acutely toxic.

Skin corrosion/irritation - This product is not expected to be a skin hazard.

Serious eye damage/eye irritation - Direct contact with eyes may cause severe irritation.

Respiratory or skin sensitization:

Respiratory sensitization - No respiratory sensitizing effects known.

Skin sensitization - Not known to be a dermal irritant or sensitizer.

Germ cell mutagenicity - No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity - Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen and classified by ACGIH® as a suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline Silica(Quartz) (CAS 14808-60-7) 1 Carcinogenic to humans.

Respirable Tridymite and Cristobalite
(other forms of Crystalline) (CAS Mixture) 1 Carcinogenic to humans.

NTP Report on Carcinogens:

Crystalline Silica(Quartz) (CAS 14808-60-7) - Known To Be Human Carcinogen.

Reproductive toxicity - Not expected to be a reproductive hazard.

Specific target organ toxicity – single exposure - Not classified.

Specific target organ toxicity – repeated exposure

Respirable crystalline silica: May cause damage to organs (lung) through repeated exposure prolonged or repeated exposure.

Aspiration hazard - Due to the physical form of the product it is not an aspiration hazard.

Chronic effects Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Section 12: Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms. Discharging limestone dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.
Persistence and degradability	Not applicable.
Bioaccumulative potential	Not applicable.
Mobility in soil	Not applicable.
Other adverse effects	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

Section 13: Disposal Considerations

Disposal Instructions: Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

Hazardous waste code: Not Regulated

Waste from Residue / Unused Products: Dispose of residue or unused products in accordance with any and all applicable federal, state, and local laws, regulations, and practices

Contaminated Packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or dispose of in accordance with any and all applicable federal, state, and local laws, regulations, and practices.

Section 14: Transport Information (Not intended to be all-inclusive)

Magnesium Limestone (Dolomite) is not classified as a hazardous material by US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by any mode of transport.

UN number - Not Regulated

UN proper shipping name - Not regulated

DOT Transport hazard class – Not Applicable

DOT Packing group – Not applicable

International Maritime Dangerous Goods Code (IMDG Code) – Not regulated as dangerous goods.

International Air Transport Association (IATA) – Not regulated as dangerous goods

Transport in bulk (according to Annex II of MARPOL 73/78 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code (IBC Code))). Not Applicable

Section 15: Regulatory Information (Not intended to be all-inclusive.)

US Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) – Not Regulated

U.S. TSCA Inventory List. All Chemical ingredients are listed.

RCRA Hazardous Waste Number: Not Listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261): Not Classified

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA Hazardous Substance List (40 CFR 302.4) Not listed

CERCLA Reportable Quantity (RQ): not listed

Super Fund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories

Immediate hazard – No; Delayed hazard – Yes; Fire hazard – No;

Pressure hazard – No; Reactivity hazard - No

SARA 311/312 Hazardous Chemical: Yes SARA 313 (TRI Reporting) – Not Regulated

SARA Toxic Chemical (40 CFR 372.65): not listed

SARA 302 (Extremely Hazardous Substance): Not Listed

Specifically, Regulated Substance (29 CFR 1910): not listed

Mine Safety Health Administration - not listed

Clean Air Act (CAA) Section 112 – Hazardous Air Pollutants (HAP's) List – Not Regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) – Not Regulated

Safe Drinking Water Act (SDWA) – Not Regulated

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) - Not Listed

Canadian Regulations. Magnesium limestone (dolomite) products containing crystalline silica and calcium carbonate are classified D2A and are subject to WHMIS requirements.

Additional State or Province regulations may be applicable. For Example:

US. Massachusetts RTK - Substance List

Crystalline Silica (Quartz) (CAS 14808-60-7)

Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US. New Jersey Worker and Community Right-to-Know Act

Crystalline Silica(Quartz) (CAS 14808-60-7)

Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US. Pennsylvania Worker and Community Right-to-Know Law

Crystalline Silica (Quartz) (CAS 14808-60-7)

Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline Silica (Quartz) (CAS 14808-60-7).

Section 16: Other Information

Original Issue Date: May 11, 2015. Revision date for version 2720 – June 29, 2020

Prior Revision Dates: August 25, 2016, March 24, 2017, April 29, 2017, January 16 & 18, 2018, April 23, 2018, Updated NatFeed Logo, Jan 18, 2019 and Jan 21, 2020; Added product codes Feb 10, 2020. Update for ACGIH® December 9, 2021.

Abbreviations (See also Section 8 – table of Selected Occupational Exposure Limits)

CAS — Chemical Abstract Service

NTP — National Toxicology Program

CFR — Code of Federal Regulations

RCRA — Resource Conservation and Recovery Act

DOT — Department of Transportation

RQ — Reportable Quantity

GHS — Globally Harmonized System

SDS — Safety Data Sheet

HEPA — High Efficiency Particulate Air

TPQ — Threshold Planning Quantity

IARC — International Agency for Research on Cancer

TSCA — Toxic Substances Control Act

NOEC — No Observed Effect Concentration

UN — United Nations

NA — Not Applicable

The information reported in this SDS relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of National Lime and Stone Company's knowledge and belief, accurate and reliable as of the date indicated. However, no representation, warranty, or guarantee is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules, or insurance requirements.

NATIONAL LIME & STONE COMPANY MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE. THE DETERMINATION OF PRODUCT SUITABILITY FOR ANY PARTICULAR USE IS THE SOLE RESPONSIBILITY OF THE PURCHASER AND USER.

IN THE EVENT OF BREACH OF ANY WARRANTY OF ANY TYPE, THE SOLE REMEDY OF THE PURCHASER AND/OR USER SHALL BE REPLACEMENT OF THE PRODUCT PURCHASED. UNDER NO CIRCUMSTANCES WILL SELLER BE LIABLE FOR DAMAGES INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES, REGARDLESS OF THE LEGAL THEORY UPON WHICH A CLAIM MAY BE BASED.

End of SDS 4921