

NOSB NATIONAL LIST FILE CHECKLIST

LIVESTOCK

MATERIAL NAME: #8 Hydrated Lime



NOSB Database Form



References



MSDS (or equivalent)



TAP Reviews from: Brian Baker

**NOSB/NATIONAL LIST
COMMENT FORM
LIVESTOCK**

Material Name: #8 Hydrated Lime

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. This material should be placed on the proposed National List as:
_____ Prohibited Natural _____ Allowed Synthetic.

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: Sept 19, 1995

Name of Material: Hydrated Lime

Reviewer Name: Brian Becker

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 (This material does not belong on National List)

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

For use as a family disinfectant ~~and~~ a foot bath, topical disinfectant and sleep disp.

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

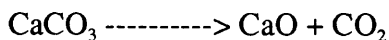
Signature

Date

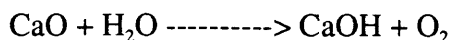
9/25/95

Hydrated Lime

Hydrated lime is produced by the heating of calcium carbonate yielding quicklime and carbon dioxide gas:



Then reacting the quicklime with water:



The caustic solution can be used in livestock production several ways: (1) As a cleansing agent for barns, stables and other living areas; (2) as a footbath and (3) as a topical disinfectant on wounds; (4) as a sheep dip, often with sulfur (lime-sulfur) for a traditional and effective form of control for mange and scabies on sheep (Spaulding, 1976).

1. Hydrated lime is caustic and reactive, and should be used with caution.
2. See calcium hydroxide, approved for processing.
3. See processing.
4. See processing.
5. Rapidly raises soil pH and can cause soil compaction similar to quicklime. Should not be applied directly to range or pasture soils, particularly in alkali conditions.
6. As a disinfectant and footbath: sodium bicarbonate, sodium carbonate, sodium hypochlorite, hydrogen peroxide, which are all synthetic and have not yet been reviewed for livestock production. Other external parasiticides used in organic farming include pyrethrin and rotenone. Most other alternatives are not compatible with organic farming.
7. Restricted use is compatible. Calcium hydroxide has already been approved as a processing aid; lime-sulfur has been approved for crop use. Its use is particularly important to relieve sheep from suffering from external parasites.

Recommendation:

Synthetic: Yes

Allowed: Yes

Restrictions: Cannot be used in direct contact with soil. Cannot be used to cauterize mutilations and castrations.

Reference: C.E. Spaulding, *A Veterinary Guide for Animal Owners*. Emmaus: Rodale Press, 1976.

Signed: _____

Brian Baker

Date

9/25/95

Identification

Common Name **Hydrated Lime** **Chemical Name** Calcium Hydroxide
Other Names Slaked Lime
Code #: CAS **Code #: Other**
N. L. Category Synthetic Allowed **MSDS** yes

Chemistry

Family
Composition 36% Ca and 20% Mg. CaOH

Properties Soft White Crystalline Powder
Odorless

How Made

Hydrated lime is made by burning limestone gradually in a lime kiln and then adding the right amount of water.

Use/Action

Type of Use Livestock

Use(s) Pest control. Antacid when used as limewater, and also reduces scours in young animals. Antidotal to high tannin intake as in oak leaf poisoning of cattle. Topically used as an irritant and caustic in dehorning pastes and in dessicant wound treatment preparations. An excellent deodorant over fecal wastes.

Action

Combinations

Status

OFPA

N. L. Restriction Category 2

EPA, FDA, etc

Safety Guidelines

Directions

Registration

State Differences

Historical status

International status

OFPA Criteria

2119(m)1: chemical interactions

2119(m)2: toxicity & persistence

Breaks down readily in the soil into Calcium carbonate (limestone) and water.

2119(m)3: manufacture & disposal consequences

2119(m)4: effect on human health

-Use respiratory protection, safety goggles and protective clothing when handling.

2119(m)5: agroecosystem biology

The trace amounts reaching the soil from livestock use would have the positive effect of contributing calcium. In direct soil application however, it would create a strong imbalance of soluble calcium which would negatively affect soil microbes and cause rapid oxidation of other soil nutrients.

2119(m)6: alternatives to substance

2119(m)7: Is it compatible?

References

Rossoff, Irving S., Handbook of Veterinary Drugs, 1974. Springer Publishing Co., NY

HYDRATED LIME REFERENCES

SilverPlatter v 2.15

AGRICOLA (1992 - June 1994)

AU: Boucher,-J.; Adams,-R.

TI: Hydrated lime as an insect repellant.

SO: Grow-Veg-Small-Fruit-Newsl. Storrs, Conn. : Coop. Ext. Serv., USDA, College of Agriculture & Natural Resources, Univ. of Conn. Feb 1993. v. 93 (2) p. 4.

CN: DNAL SB321.G85

PY: 1993

AU: Metzger,-W.H.

TI: The rates of reaction with acid soils of finely divided soil liming materials.

SO: J-Am-Soc-Agron. Madison, Wis. : American Society of Agronomy. June 1933. v. 25 (6) p. 377-383.

CN: DNAL 4-AM34P

PY: 1933

AB: The study reported pertains to the reaction rates of four finely divided liming materials with two acid soils. The materials included were hydrated lime, pulverized high calcium limestone, pulverized dolomitic limestone, and a by-product precipitated calcium carbonate known commercially as "Plant Lime". All materials were employed at three rates of application and in chemically equivalent amounts. Change in pH, decrease in Jones lime requirement, and decrease in total carbonates were used as criteria of rate of reaction. The incubation periods varied from 1 week to 1 year. Both pH change and decrease in lime requirement proved unreliable indicators of rate of reaction. The former remained approximately constant after 1 week. Lime requirement reached a minimum in 1 or 2 weeks and thereafter showed a material increase. Based upon the disappearance of carbonates, hydrated lime and the precipitated carbonate were about equally rapid in reaction. The precipitated carbonate reacted faster than the high calcium limestone. The difference can probably be accounted for by the somewhat greater fineness of the former. The dolomitic limestone was measurably less active than the high calcium limestone, the difference largely disappearing after 2 months incubation. It is doubtful whether any practical significance may be attributed to the differences in rates of reaction among the materials studied.

AU: MacIntire,-W.H.; Sanders,-K.B.; Shaw,-W.M.

TI: The availability of hydrated lime, limestone, and dolomite of two degrees of fineness, with supplements of red clover hay, as measured by lysimeter leachings.

SO: J-Am-Soc-Agron. Madison, Wis. : American Society of Agronomy. Apr 1933. v. 25 (4) p. 285-297.

CN: DNAL 4-AM34P

PY: 1933

AB: In applying the foregoing results obtained in a 4-year study with 18 pairs of lysimeters several points are to be considered. Commercial limestone and the home-ground products differ. The former is often a product consisting solely of finely ground material. The latter is generally a mixture of different finenesses, limited by the character of rock as it affects tonnage per diem in grinding, wear on machinery, and ultimate cost. Since the commercial products are usually finer than the coarser separates used in the present experiment, the results may be interpreted as applying directly for such products and for types of soil similar to the one used and under comparable climatic conditions. For a soil of good fixing capacity, even without marked acidity, the 100- to 200-mesh fineness of either limestone or dolomite is comparable to an equivalence of hydrated lime, when evaluated by enhanced nitrification and sulfate generation, soluble Ca plus Mg, and repressive effects upon

potassium solubility for the 4-year period. The same holds for the 40- to 50-mesh limestone. The 40- to 50-mesh dolomite is not so readily available during the first year, but the disparity is not great. Since the heavier types of soils of greater acidity would effect a disintegration more rapid and intensive than that found for the well-buffered, near-neutral soil used, it would follow that the fineness of 40- to 50-mesh is ample for such soils, especially if an appreciable period elapse between the incorporation and the seeding. For sandy soils, however, it would be expected that the differences attributable to fineness would be greater than those found for the heavier type of soil. This would be especially true in case of the less soluble dolomite, which should be exceedingly fine when used in sandy soils. Although the total amounts of soluble Ca plus Mg derived from the several dolomite additions were generally comparable to, though slightly in excess of, those found for the corresponding limestone addition, there was a distinct difference in the proportions of the two elements present in the free-soil water. This is accounted for not only by marked enhancement of soluble magnesium derived from the dolomite, but also by the diminished outgo of native magnesium where the high-calcic materials were used. The red clover hay increased the outgo of calcium and magnesium, the largest changes being noted during the first year, but this increase was due, primarily, to the amount of soluble calcium and magnesium supplied by the red clover additions. Hence, the addition of green manure did not appreciably increase loss of the Ca plus Mg supplied by the liming materials. As a close approximation, applying to all forms, one-fourth of the added liming materials was lost during the 4-year period. The several materials may be considered of comparable value in their tendencies to increase supplies of nitrates and sulfates. When applied to home-ground limestone, the findings indicate that such a product may well be evaluated on the basis of the fraction that is of the fineness less than 40-mesh. The coarser fractions ultimately undergo disintegration, but for immediate use the evaluation should be on the fraction that would pass a 40-mesh sieve. As has been pointed out (3, 5), the factors of seasons and depth of incorporation are also to be considered.

AU: Walker,-R.H.; Brown,-P.E.

TI: Nitrification in the Grundy silt loam as influenced by liming.

SO: J-Am-Soc-Agron. Madison, Wis. : American Society of Agronomy. May 1935. v. 27 (5) p. 356-363.

CN: DNAL 4-AM34P

PY: 1935

AB: 1. Plats of Grundy silt loam were treated with different amounts of quarry-run limestone, with limestones of different degrees of fineness, and with hydrated lime. The soil of these plats was sampled frequently over a period of 5 years and its nitrifying power was determined. 2. The limestones and hydrated lime exerted an appreciable effect on the pH and also the nitrifying power of the soil. The changes in nitrifying power appeared to be associated directly with the changes in hydrogen-ion concentration, these changes being, to a certain extent, a function of the amount of limestone, or of the degree of fineness of the limestone applied. 3. The data were analyzed statistically to determine the significance of the differences in nitrifying power of the variously treated soils. This analysis shows that where limestone was applied in amounts less than the lime requirement of the soil or slightly above, the mean increases in nitrifying power induced by 1-ton additional applications of limestone were comparatively large and rather consistent, but they are not quite large enough to be significant. 4. Two-ton increases in amounts of limestone applied, induced such large increases in nitrifying power that they were significant or highly significant in each case. 5. Where limestone was applied in amounts beyond the lime requirement of the soil, the increase in nitrifying power induced per unit of limestone was reduced somewhat, and larger additional amounts were found necessary to bring about significant increases in nitrifying power. 6. The 5-year means of the nitrifying power of soils treated with equal amounts of quarry-run, 20-mesh, 40-mesh, and 100-mesh

limestones were comparatively uniform, and all except that for the 40-mesh limestone were significantly lower than that for the hydrated lime. The mean difference in nitrifying power between the 40-mesh and hydrated lime treated soils lacked only a very small amount of being significant statistically.

AU: Hartwell,-B.L.; Damon,-S.C.

TI: Relative lime needs of sulfate of ammonia and nitrate of soda and of different crops.

SO: J-Am-Soc-Agron. Madison, Wis. : American Society of Agronomy. Sept 1927. v. 19 (9) p. 843-849.

CN: DNAL 4-AM34P

PY: 1927

AB: This paper contains the results for 1915 to 1926 of a field comparison, conducted since 1893, of equal amounts of nitrogen in sulfate of ammonia and nitrate of soda accompanied by liberal amounts of phosphorus and potassium. Prior to 1915, each source of nitrogen had been accompanied by an equal amount of lime, and also had been used without lime. Subsequently, extra lime was applied to the more-limed sulfate plat to make its reaction like that of the limed nitrate plat. The average pounds of calcium oxid per year during the 34 years was 275 applied to the limed nitrate plat and 422 to the more-limed sulfate plat. The average annual application of nitrogen was 49 pounds, therefore, each pound of nitrogen required 3 pounds more of calcium oxid to attain an equal soil reaction; that is, 100 pounds of sulfate of ammonia required about 80 pounds of hydrated lime, or 120 pounds of limestone, more than was required by 128 pounds of nitrate of soda supplying the same amount of nitrogen. When completely oxidized, sulfate of ammonia supplying 1 pound of nitrogen would require for neutralization 4 pounds of calcium oxid. It is believed that this should be the basis of future liming to maintain the sulfate plat at the same reaction as the nitrate plat. The relative lime-response of the 22 different kinds of crops is expressed as low, medium, or high. Because the two extremely sensitive crops to acid-soil conditions, spinach and lettuce, tended to yield less with sulfate than with nitrate, determinations are included of the soil content of active alumina and of nitrate-nitrogen under the two conditions. In general, the crop yields were about alike with the two sources of nitrogen when the same reaction of the Merrimac silt loam was maintained.

AU: MacIntire,-W.H.; Shaw,-W.M.; Sanders,-K.B.

TI: The influence of liming on the availability of soil potash.

SO: J-Am-Soc-Agron. Madison, Wis. : American Society of Agronomy. June 1927. v. 19 (6) p. 483-505.

CN: DNAL 4-AM34P

PY: 1927

AB: It is pointed out that the results of laboratory interchange studies have served as the basis for unjustified assumptions that potassium will be liberated by calcium in the practice of liming. Evidence is cited to show that a neutral salt of calcium may liberate potassium to the leachings from an acid soil, but that the reverse effect results when supplementary additions of CaO or MgO are made. Studies were made of the present availability of the potash of three soils which had been subject to the influence of liming in plat studies extending over respective periods of 7, 17, and 21 years. Distilled and carbonated water, HCl (1.115), and 0.2 N HCl digestion and leachings to equilibrium with 0.05 N HCl and with N/I NH₄Cl were used to measure the present availability of native and added potash as influenced by liming. In general the two dilute acid and NH₄Cl procedures gave comparable results without consistently showing a definite effect from liming, although indicating increase in potash reserve supplies where potash had been added. The two aqueous extraction procedures did indicate a definite decrease in availability of native and added potash as the result of liming. No indication of potassium liberation was adduced in

any case. The extraction studies were in line with the yields from those plats as given by Mooers. From a four-year supplementary lysimeter study upon the influence of surface and subsurface incorporations of $\text{Ca}(\text{OH})_2$ at four rates, high-magnesian lime, and five limestone and five dolomite constants upon native potash it was demonstrated that: (a) The surface-zone incorporations gave consistently greater yields, whereas the subsurface incorporations gave consistently lower yields, of leachable potash than were given by the untreated soil; (b) neutral calcium salts exerted no liberative effect in the zone of alkali-earth incorporation; (c) calcium salt leachings effected a potash liberation in the lower untreated acid zone; (d) progressive decreases in annual outgo were found; and (e) high-magnesian limes caused diminished potash outgo, irrespective of zone of incorporation. From a second supplementary lysimeter study relative to the influence of hydrated lime, that of ground limestone and that of dolomite (all equivalent to 1 ton of CaO), upon the fate of water-soluble potash added through clover cuttings, where all additions were mixed throughout the full depth of soil, it was found that: (a) Each unsupplemented alkali-earth addition resulted in a potash outgo less than that from the control; (b) the several incorporations so "fixed" the 70-pound potash increment from 2 tons of clover as to give an average outgo less than that from the no-clover soil; and (c) the 99-pound increase in potash outgo from the unsupplemented 8-ton clover incorporation, which supplied 280 pounds of K_2O , was reduced to an outgo of only 72 pounds as an average from the five lime treatments. It is pointed out that, when pH values indicate excess of H-ions, potash liberation is effected by neutral calcium salts and that the reverse, potash fixation, is brought about when H-ion concentration is greatly reduced, or superseded by OH-ion concentration, if the OH concentration is not so excessive as to induce hydrolysis of native potassic complexes, as the result of the practical liming of these particular soils. As differing from the interchange between native potash for added lime, through zone-of-incorporation conditions which permit such interchange, a new viewpoint is advanced, that of the value of liming in its capacity to conserve soluble potash additions in a form most probably available to plants, yet resistant to excessive loss through normal leaching.

SilverPlatter v 2.15 AGRICOLA (1970 - 1978)

AU: Weaver,-D-J; Wehunt,-E-J

TI: Control of peach tree short life with hydrated lime and soil fumigation

SO: Proc-Annu-Conv-Natl-Peach-Counc, 1976, 35th: 52-53.

CN: DNAL SB371.N3

PY: 1976

AU: Anderson,-W-C; Gabrielson,-R-L; Haglund,-W-A; Baker,-A-S

TI: Clubroot [*Plasmodiophora brassicae*] control in crucifers with hydrated lime and PCNB [Pentachloronitrobenzene]

SO: Plant-Dis-Rep, July 1976, 60 (7): 561-565.

CN: DNAL 1.9-P69P

PY: 1976

AU: Rodriguez-Geigel,-A

TI: Hydrated lime; importance in tropical agriculture. [Fertilizers]

SO: Sugar-J, Jan 1971, 33 (8): 10-13.

CN: DNAL 65.8-SU391

PY: 1971

SilverPlatter v 2.15 AGRICOLA (1984 - 12/91)

AU: Starcher,-G.-C. (George Columbus)
TI: A stone-fruit spray made from hydrated-lime and sulphur.
SO: Blacksburg, Va. : Virginia Polytechnic Institute, Virginia Agricultural Experiment Station, 1916. 14 p.
CN: DNAL 100-V815-1-no.210
PY: 1916

AU: Vandevender,-J.C.; Sencindiver,-J.C.
TI: The effects of three forms of nitrogen fertilizer, phosphorus, and hydrated lime on abandoned mine land reclamation.
SO: Proceedings / 1982 Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation, Dec 6-10, 1982 ; ed. G.H. Graves. Lexington, Ky. : Office of Engineering Serv., College of Engineering, Univ. of Kentucky, c1982. p. 497-502.
CN: DNAL TD195.S75S95-1982
PY: 1982
SilverPlatter v 2.15 AGRICOLA (1979 - 1984)

AU: Vandevender,-J.C.; Sencindiver,-J.C.
TI: The effects of three forms of nitrogen fertilizer, phosphorus, and hydrated lime on abandoned mine land reclamation.
SO: Proceedings / 1982 Symposium on Surface Mining, Hydrology, Sedimentology, and Reclamation, Dec 6-10, 1982; ed. G.H. Graves. Lexington, Ky. : Office of Engineering Serv., College of Engineering, Univ. of Kentucky, c1982. p. 497-502.
CN: DNAL TD195.S75S95-1982
PY: 1982

AU: Wehunt,-E.J.; Weaver,-D.J.
TI: Effect of planting site preparation, hydrated lime, and DBCP (1,2-dibromo-3-chloropropane) on populations of *Macroposthonia xenoplax* and peach tree short life in Georgia.
SO: J-Nematol. Ames : Society of Nematologists. Oct 1982. v. 14 (4) p. 567-571.
CN: DNAL QL391.N4J62
PY: 1982

SilverPlatter v 2.15 AGRICOLA (1970 - 1978)

AU: Weaver,-D-J; Wehunt,-E-J
TI: Control of peach tree short life with hydrated lime and soil fumigation
SO: Proc-Annun-Conv-Natl-Peach-Counc, 1976, 35th: 52-53.
CN: DNAL SB371.N3
PY: 1976

AU: Anderson,-W-C; Gabrielson,-R-L; Haglund,-W-A; Baker,-A-S
TI: Clubroot [*Plasmodiophora brassicae*] control in crucifers with hydrated lime and PCNB [*Pentachloronitrobenzene*]
SO: Plant-Dis-Rep, July 1976, 60 (7): 561-565.
CN: DNAL 1.9-P69P
PY: 1976

REPORT NUMBER: 971
TAGS NO: MZCALHY
EFFECTIVE DATE: 03/02/93

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 001
VERSION: 001

PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
PROD NO :

VAN WATERS & ROGERS INC. , SUBSIDIARY OF UNIVAR (206)889-3400
1800 CARILLON POINT , KIRKLAND , WA 98033

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

----- FOR PRODUCT AND SALES INFORMATION -----

CONTACT YOUR LOCAL VAN WATERS & ROGERS BRANCH OFFICE AT
VW&R PHOENIX 602-272-3272 PHOENIX , AZ

PRODUCT NAME:

CALCIUM HYDROXIDE

Hydrated Lime

TAGS: MZCALHY

PRODUCT IDENTIFICATION:

SYNOPSIS: Calcium hydrate; slaked lime

UNION CAS No.: 1305-62-0

Molecular Weight: 74.09

Hazardous Ingredients: Calcium hydroxide Chemical Formula: Ca(OH)2

PRECAUTIONARY MEASURES

HAZARD! HARMFUL IF SWALLOWED. CAUSES IRRITATION.

Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.

EMERGENCY FIRST AID

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. In all cases call a physician.

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PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
PROD NO :

SEE SECTION 5.

OSHA Hazard Class: Not Regulated

Physical Data

Appearance: Fine white to yellow white powder.
Odor: Odorless.
Solubility: Slightly soluble in water, soluble in acid solutions.
Boiling Point: Decomposes.
Melting Point: 580 C (1076 F).
Vapor Density (Air=1): No information found.
Vapor Pressure (mm Hg): No information found.
Specific Gravity: 2.24
Evaporation Rate: No information found.

Fire and Explosion

SECTION 2

Information

Fire: Not considered to be a fire hazard.
Explosion: Not considered to be an explosion hazard.
Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire.
Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Reactivity Data

SECTION 3

Stability: Stable under ordinary conditions of use and storage. Readily absorbs carbon dioxide from air to form calcium carbonate.

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PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
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Hazardous Decomposition
Products:

Caustic fumes of calcium oxide form when heated to decomposition (7580 C; 1044 F).

Hazardous Polymerization: Will not occur.

Incompatibilities: Violent reactions with maleic anhydride, nitroethane, nitromethane, nitroparaffins, nitropropane, phosphorus. As a strongly alkaline material, it is incompatible with acids.

Leak/Spill Disposal Information SECTION 4

Clean-up personnel may require protective clothing and respiratory protection from dust. Scoop up solid and place in clean steel container for recovery or disposal in a waste facility. Scrap material may be disposed of, depending on quantity, as follows: Use scrap to neutralize waste acid, or disperse in water, neutralize with hydrochloric acid, and flush to sewer with much water to keep salt concentrations within allowed limits.

Ensure compliance with local, state and federal regulations.

Health Hazard Information SECTION 5

Exposure/Health Effects

Inhalation: May cause irritation of the mucous membrane and upper respiratory tract.

Ingestion: Gastric irritant. Ingestion may be followed by severe pain, vomiting, diarrhea, and collapse.

Skin Contact: Corrosive. May cause severe burns and blistering, depending on duration of contact.

Eye Contact: Corrosive. May product severe irritation and pain. May induce ulcerations of the corneal epithelium.

Chronic Exposure: A narrowing of the esophagus may occur weeks, months, or years after ingestion, making swallowing difficult.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin conditions may be more susceptible to the effects of this substance.

PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
PROD NO :

II. FIRST AID

Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion: If swallowed, DO NOT induce vomiting. Give large quantities of water or milk if available. Call a physician immediately. Never give anything by mouth to an unconscious person.

Skin Exposure: Remove any contaminated clothing. Wipe off excess from skin. Wash skin with plenty of water for at least 15 minutes. Get medical attention promptly.

Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

III. TOXICITY (R.T.C.), 1986)

Oral Rat LD50: 7.34 g/kg. Mutation reference cited. Aquatic Toxicity Rating:
EC₅₀: 96: 1000-10 ppm.

IV. Occupational Control Measures SECTION 6

Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 5 mg/m³
(TWA) -ACGIH Threshold Limit Value (TLV): 5 mg/m³
(TWA)

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved) If the TLV is exceeded, a dust/mist respirator with chemical goggles may be worn, in general, up to ten times the TLV. Consult respirator supplier for limitations. Alternatively, a supplied air full facepiece respirator or airtight hood may be worn.

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PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
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Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work

Storage and Special Information SECTION 7

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances.

Addendum to Material Safety Data Sheet

REGULATORY STATUS

Hazard Categories for SARA
Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
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X

Product or Components of Product:	SARA EHS Sec. 302		SARA Sec. 313 Chemicals		CERCLA Sec.103	RCRA Sec.
	RQ	TPQ	Name List	Chemical Category	RQ lbs	261.33

CALCIUM HYDROXIDE
(1005-62-0)

No	No	No	No	No	No
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SARA Section 302 EHS RQ:
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:
Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:
Toxic Substances subject to annual release reporting requirements

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PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
PROD NO :

listed at 40 CFR 372.65.

CEPCLA Sec. 103:
Comprehensive Environmental Response, Compensation and Liability Act (Superfund)
Releases to air, land or water of these hazardous substances which exceed the
Reportable Quantity (RQ) must be reported to the National Response Center,
(800-424-8802); Listed at 40 CFR 302.4

CERCLA:
Resource Conservation and Reclamation Act. Commercial chemical product wastes
designated as acute hazardous or toxic under 40 CFR 261.33

Addendum to MSDS - California Proposition 65

The State of California requires that we provide to customers and
employees in California warnings about reproductive and carcinogenic
hazards associated with substances sold in California that are listed
under Proposition 65. Information on this Proposition 65 MSDS addendum
addresses that requirement and should be used in conjunction with this
Material Safety Data Sheet.

Product(s): CALCIUM HYDROXIDE

CAS NO. 1305-62-0

WARNING: This product may contain a chemical known to the state
of California to cause birth defects or other reproductive harm.

Maximum Limits of Impurities

HEAVY METALS 0.004% MAX
LEAD 0.001% MAX

REPORT NUMBER: 971
PROD NO: MZCALHY
EFFECTIVE DATE: 03/02/93

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

PAGE: 007
VERSION: 001

PRODUCT: CALCIUM HYDROXIDE

ORDER NO:
PROD NO :

FOR ADDITIONAL INFORMATION -----

CONTACT: MSDS COORDINATOR VW&R PHOENIX
DURING BUSINESS HOURS, PACIFIC TIME (206)889-3400

01/12/95 07:42 PRODUCT: CUST NO: ORDER NO:

NOTICE -----

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