

Safety Data Sheet according to OSHA-GHS (29 CFR part 1910.1200 HCS 2012)

PRODUCT NAME CALMAG 12-2-12
Product Code: UPC - 728028467222 (1,000g)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier: CALMAG 12-2-12

recommended uses:

Fertilizer end-use, preparation of fertilizers mixtures.
Dry fertilizer for mixing with water for soil applications.

Restrictions on uses: None

Supplier DAKINE 420, LLC.
Address 494 SW Veterans Way, Suite #6
Redmond, OR 97756
Telephone Number (541) 420-4645
Emergency Telephone Number (800) 424 9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

Classification of the mixture

Classification of the chemical in accordance with 29CFR §1910.1200

Hazard classes and Hazard categories	Hazard statements
Toxic to reproduction cat. 1B	May damage fertility. May damage the unborn child.

Label elements

Hazard pictograms



Signal word DANGER
Hazard Statements May damage fertility. May damage the unborn child.

Precautionary Statements:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Wear protective gloves/ protective clothing/ eye protection.
IF exposed or concerned: Get medical advice/attention.
Store locked up
Dispose of contents/container according to local/state/federal regulations.

Other hazards: None

Classification of the relevant ingredients of the mixture in accordance with 29CFR §1910.1200

Potassium nitrate	Oxidizing solid, cat. 3
Boric acid	Toxic to reproduction, cat. 1B

3. COMPOSITION/INFORMATION ON INGREDIENTS

Potassium nitrate - CAS #7757-79-1 / Concentration 25-45%
Hydrated ammonium calcium nitrate double salt - CAS #152-12-2 / Concentration 15-45%
Urea phosphate Cas# 4861-19-2/Concentration <5%
Perchlorate (ClO₄) <0.01%
Iodate (IO₃) <50 ppm

4. FIRST AID MEASURES

Description of first aid measures

General Information

In case of persisting adverse effects, consult a physician.

Never give anything by mouth to an unconscious person or a person with cramps.

In case of inhalation

Remove to fresh air and keep at rest in a position comfortable for breathing.

Get medical attention for any breathing difficulty.

In case of skin contact

Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

In case of eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

In case of ingestion

Rinse mouth and drink plenty of water. Do not induce vomiting.

Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

The following symptoms may occur:

In case of inhalation Irritation to respiratory tract

Delayed lung effects after short term exposure to thermal degradation products.

In case of skin contact May cause redness or irritation

In case of eye contact May cause redness or irritation

In case of ingestion Ingestion of large amounts may cause: gastrointestinal disturbances

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use any suitable means for extinguishing surrounding fire.

Unsuitable material: None, but attention should be paid to compatibility with chemicals surrounding.

Specific hazards arising from the chemical

Thermal decomposition can lead to the escape of toxic/corrosive gases and vapours.

Thermal decomposition products: Nitrous oxides (NO_x), nitrites, phosphorus oxides, ammonia and metallic oxides.

Protective equipment and precautions for firefighters

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (self contained breathing apparatus (SCBA)).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Provide adequate ventilation. Wear personal protection equipment (Section 8).

Environmental precautions

Do not allow to enter into surface water or drains. Ensure waste is collected and contained.

Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal or recovery.

Unsuitable material for containment/taking up: None specified

Other information

None

7. HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid generation of dust. Provide adequate ventilation. Wear personal protective equipment. Wash hands after handling. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Keep/store only in original container. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and Section 15 for more information regarding California State regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Occupational exposure limits

OSHA	PEL	Potassium nitrate	Boric acid
	STEL/ceiling	Not Established	Not Established
ACGIH (2012 TLVs® and BEIs®)	TWA	Not Established	2 mg/m ³ (inhal. fraction)
	STEL/ceiling	Not Established	6 mg/m ³ (inhal. fraction)

Derived No-Effect Level (DNEL) suggested by the manufacturer

Workers (industrial/professional):	
Potassium nitrate	
DNEL Human, dermal, long term (repeated):	20.8 mg/kg/day (systemic)
DNEL Human, inhalation, long term (repeated):	36.7 mg/m ³ (systemic)
Boric acid	
DNEL Human, dermal, long term (repeated):	4800 mg B/day (systemic)

Derived No-Effect Level (DNEL) is the level of exposure to the substance above which humans should not be exposed.

Engineering controls

Use exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protective Equipment

Eye/face protection

Skin protection

Chemical goggles required all the time.

Nitrile rubber gloves, over 0.11 mm thickness, > 480 min. breakthrough time, recommended. Overall.

Respiratory protection

Wear respiratory protection, where airborne concentrations are expected to exceed exposure limits.

General Hygiene Considerations

Avoid contact with eyes and skin. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid, granular or crystalline powder
Color	white to pale blue
Odor	Odorless
Odor Threshold	No applicable
pH value	No data available
Melting point / freezing range	No data available
Boiling temperature / boiling range	Not applicable
Flash point	Not applicable
Vaporization rate / Evaporation rate	No data available
Flammable solids	Not flammable
Explosion limits (LEL, UEL)	Not applicable
Vapor pressure	No data available
Vapor density	No data available

Relative Density	No data available
Solubility	> 100 g/L at 20°C/68°F (water)
Partition coefficient n-octanol/water	Not applicable
Auto ignition temperature (AIT)	Not applicable
Decomposition temperature	No data available
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing properties	Oxidizer
Other information	
None	

10. STABILITY AND REACTIVITY

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stable under normal storage and temperature conditions.

Possibility of hazardous reactions

None identified

Conditions to avoid

None identified

Incompatible materials

None identified

Hazardous decomposition products

Thermal decomposition products: Nitrous oxides (NO_x), nitrates, phosphorus oxides, ammonia and metallic oxides.

11. TOXICOLOGICAL INFORMATION

The following information mostly refers to the major component of the product.

Likely routes of exposure (inhalation, ingestion, skin and eye contact)

Eye contact, skin contact and inhalation. Exposure by ingestion is not expected to occur through normal industrial or agricultural use.

Symptoms related to the physical, chemical and toxicological characteristics

May be irritant to the respiratory tract. May cause redness or irritation to the skin and eyes. Ingestion of large amounts may cause gastrointestinal disturbances. May cause delayed lung effects after short term exposure to thermal degradation products.

Information on toxicological effects from short and long term exposure

There is no data for the mixture itself.

Acute toxicity

Acute oral toxicity	LD50:	
Acute Toxicity Estimate for the mixture	> 2000 mg/kg bw	(additivity formula)
Potassium nitrate	> 2000 mg/kg bw	
Boric acid	3765 mg/kg bw	
Assessment / classification:	Based on available data for the ingredients of the mixture, the classification criteria are not met.	

Irritant and corrosive effects

Irritant to the skin	Result	Method
Potassium nitrate	Non-irritant	Equivalent/similar to OECD guideline 404
Boric acid	Non-irritant	Equivalent/similar to OECD guideline 404
Assessment / classification:	Based on available data, the classification criteria are not met.	
Irritation to eyes	Result	Method
Potassium nitrate	Non-irritant	OECD Guideline 405
Boric acid	Non-irritant	Equivalent/similar to OECD guideline 405
Assessment/ classification:	Based on available data, the classification criteria are not met.	

Respiratory or skin sensitisation

Skin sensitization	Result	Method
Potassium nitrate	not sensitizing.	OECD Guideline 429
Boric acid	not sensitizing.	OECD Guideline 406
Respiratory sensitisation	No information available.	
Assessment / classification:	Based on available data, the classification criteria are not met	

Genetic effects

The product does not contain ingredients classified as germ cell mutagens.

	Bacterial {Ames Test}	Chromosomal aberrations	Mutation in mammalian cell!
Potassium nitrate	negative	negative	negative
Boric acid	negative	negative	negative
Assessment / classification:	Based on available data, the classification criteria are not met		

Reproductive toxicity

Adverse effects on sexual function and fertility/developmental toxicity

OECD guideline 422.

Potassium nitrate

No adverse effects on fertility/development (NOAEL >1500 mg/kg bw).

Boric acid fertility

NOAEL (male rats): 17.5 mg B/kg bw/day (Multigeneration study)

Boron has been shown to adversely affect male reproduction in laboratory animals, however, male reproductive effects attributable to boron have not been demonstrated in studies of highly exposed workers.

developmental toxicity

Benchmark dose (BMDL05): 10.3 mg B/kg bw/day

Developmental effects have been observed in laboratory animals. The critical effect is considered to be decreased fetal body weight in rats. There is no evidence of developmental effects in humans attributable to boron in studies of populations with high exposures to boron.

Assessment / classification:

Based on available data for ingredients of the mixture, this product is classified and labelled as **Presumed human reproductive toxicant, Category 1B**, in accordance with Appendix A to 29CFR section 1910.1200.

Specific target organ toxicity (single exposure)

The product does not contain relevant ingredients classified as Target Organ Toxicant after single exposure.

Practical experience / human evidence

Potassium nitrate

No relevant effect have been observed after single exposure to potassium nitrate.

Boric acid

No relevant effect have been observed after single exposure to the substance. No reliable study supports the designation of boric acid as a respiratory irritant.

Assessment / classification:

Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure)

Organs affected:	Effects	Guideline
Potassium nitrate	None	No effects (NOAEL >1500 mg/kg bw) OECD 422
Boric acid	Testes	NOAEL (chronic, rat): 17.5 mg B/kg bw/day

A number of studies on boric acid or disodium tetraborate decahydrate in diet or via drinking water for periods of 30 days to two years in rats, mice and dogs are available. Most studies support that boron can cause adverse haematological effects and that the main target organ of boron toxicity is the testis.

Assessment / classification:

Based on available data for ingredients of the mixture, this product is classified and labelled as **Presumed human reproductive toxicant, Category 1B**, in accordance with Appendix A to 29CFR section 1910.1200.

Aspiration hazard

Physicochemical data and toxicological information does not indicate an aspiration hazard.

Assessment / classification:

Based on available data, the classification criteria are not met

Carcinogenicity

International Agency for Research on Cancer (IARC)

No component of this product present at levels N119¹ is identified as probable, possible or confirmed human carcinogen by IARC.

National Toxicology Program (NTP)

No component of this product present at levels N119¹ is identified as known or anticipated carcinogen by NTP.

29 CFR part 1910, subpart Z

No component of this product present at levels N119¹ is identified as carcinogen or potential carcinogen by OSHA.

California Proposition 65

No component of this product present at levels N119¹ is identified as carcinogen by California Prop.65.

WHO (2003) Nitrate in drinking water

No association between nitrate exposure in humans and the risk of cancer

Assessment / classification:

Based on available data, the classification criteria is not met

Other Toxicological Information

This product contains trace amounts of naturally-occurring perchlorate and iodate. Like other goitrogenic substances, perchlorate may affect iodine uptake by thyroid under specific conditions.

12. ECOLOGICAL INFORMATION

There is no data for the mixture itself. The following information mostly refers to the major component of the product.

Ecotoxicity

Aquatic Toxicity

Potassium nitrate

96-h LC50	1378 mg/L	<i>Poecilia reticulata</i> (freshwater fish)
24-h EC50	490 mg/L	<i>Daphnia magna</i> (fresh water flea).
10 d EC50	> 1700 mg/L	Several algae species

Boric acid

96-h LC50	74 - 725 mg B/L	Fish
48-h EC50	45 - 1376 mg B/L	Aquatic invertebrates
72-h EC50	40 mg B/L	Algae (<i>Pseudokirchneriella subcapitata</i>)

Assessment / classification

Based on available data, the classification criteria are not met

Persistence and degradability

The product contains mainly inorganic nitrate and phosphate salts. In aqueous solutions, these salts dissociate into their respective ions. Phosphate ions are finally incorporated into the Phosphorus cycle. Under anoxic conditions, denitrification occurs and nitrate is ultimately converted into molecular nitrogen as part of the Nitrogen cycle.

Bioaccumulative potential

Low potential for bioaccumulation based on physicochemical properties of main components.

Mobility in soil

The components of this mixture have a low potential for adsorption. Portion not taken up by plants, can leach to groundwater.

Other adverse effects

Excess nitrate leaching may enrich waters leading to eutrophication.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable federal and state laws.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal method in compliance with applicable regulations.

This product is not listed as dangerous waste in the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and Section 15 for more information regarding California State regulations.

14. TRANSPORTATION INFORMATION

US DOT (49CFR part 172)

UN-No.	Non dangerous good
UN Proper Shipping Name	Not applicable
Hazard class	Not applicable
Packing group	Not applicable
Hazard label(s)	Not applicable
Special marking	No
Special Provision	No

International Maritime Organization (IMDG Code)

UN-No.	Non dangerous good
UN Proper Shipping Name	Not applicable
Hazard class	Not applicable
Packing group	Not applicable
Marine pollutant	No
Hazard label(s)	Not applicable
Special marking	No

International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA)

UN-No.	Non dangerous good
UN Proper Shipping Name	Not applicable
Hazard class	Not applicable/Class 50

Packing group Not applicable
Hazard label Not applicable
Special marking No

Special handling procedure

None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Other special precautions

None

15. REGULATORY INFORMATION

US Federal

SARA Title III Rules

Section 311/312 Hazard Classes

Acute Health Hazard	No
Chronic Health Hazard	Yes (Toxic to reproduction)
Fire Hazard	No
Release of Pressure	No
Reactive Hazard	No

Section 313 Toxic Chemicals

NS11 Nitrate compounds (water dissociable; reportable only when in aqueous solution)

Section 302 Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

None ingredient is listed.

NFPA 704/2012: National Fire Protection Association

Health	1
Fire	0
Reactivity	0
Special	None

US State Regulations

California Proposition 65	None ingredient is listed.
California Code of Regulations Title 22 (Health & Safety Code), Chapter 33	See http://www.dtsc.ca.gov/hazardouswaste/perchlorate/

Chemical Inventories

United States TSCA	All ingredients are listed
Canada DSL	All ingredients are listed
European Union (EINECS)	All ingredients are listed
Japan (METI)	All ingredients are listed

16. OTHER INFORMATION

This SDS complies with 29 CFR part 1910 subpart Z (2012) and ANSI Standard 2400.1-2004

Date Created: March 2019

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their purposes. In no event, shall Dakine 420, LLC. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Dakine 420 has been advised of the possibility of such damages.

Indication of changes

All sections were reviewed and modified to comply with 29CFR part 1910 subpart Z (2012).