SAFETY DATA SHEET

Silver Mineral Formula with Clarifier

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name Silver Mineral Formula with Clarifier

Internal identification Proprietary mineral formula with aluminum sulfate

Synonyms; trade names FROG Leap Anti-Bac Mineral Pac®

EPA Registration Number 53735-11

Recommended use of the chemical and restrictions on use

Application Pool water conditioner

Uses advised against Use only for intended applications.

Details of the supplier of the safety data sheet

Supplier

King Technology, Inc.
530 11th Ave S
Hopkins, MN 55343
United States
1+ (952) 933-6118
sdsinfo@kingtechnology.com

Emergency telephone number

Emergency telephone CHEMTREC 800-424-9300 (24 hours)

2. Hazard(s) identification

Classification of the substance or mixture

OSHA Regulatory Status The below environmental hazard classification is non-mandatory under the OSHA Hazard Communication Standard. The environmental classification is according to the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 8th revised edition, 2019.

Physical hazards Met. Corr. 1 - H290

Health hazards Skin Corr. 1A - H314 Eye Dam. 1 - H318

Environmental hazards Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

Label elements

Hazard symbols

Signal word Danger

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Hazard statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P234 Keep only in original container.
P260 Do not breathe dust.
P264 Wash contaminated skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/ doctor.
P321 Specific treatment (see medical advice on this label).
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P391 Collect spillage.
P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.
P501 Dispose of contents/ container in accordance with national regulations.

Contains

Aluminum sulfate

Other hazards

Other

No additional hazards known.
«46»% of the mixture consists of ingredient(s) of unknown acute toxicity.

3. Composition/information on ingredients

Mixtures

Calcium carbonate **80-90%**

CAS number: 471-34-1

Classification
Not Classified

Aluminum sulfate **10-20%**

CAS number: 10043-01-3

Classification
Met. Corr. 1 - H290
Skin Corr. 1A - H314
Eye Dam. 1 - H318

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Silver chloride	**<1%**
CAS number: 7783-90-6	
M factor (Acute) = 1000	M factor (Chronic) = 100

Classification
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

The full text for all hazard statements is displayed in Section 16.

Ingredient notes The exact percentage/concentration is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel. Chemical burns must be treated by a physician.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. Rinse nose and mouth with water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms are severe or persist.

Ingestion Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Get medical attention.

Skin Contact It is important to remove the substance from the skin immediately. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention. Chemical burns must be treated by a physician.

Eye contact Rinse immediately with plenty of water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

Protection of first aiders It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation A single exposure may cause the following adverse effects: Severe irritation of nose and throat. Symptoms following overexposure may include the following: Corrosive to the respiratory tract.

Ingestion May cause chemical burns in mouth, esophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

Skin contact Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.

Eye contact Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Indication of immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards Severe corrosive hazard. Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Very toxic or corrosive gases or vapors.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters Regular protection may not be safe. Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. This product is corrosive. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. For waste disposal, see Section 13.

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

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7. Handling and storage

Precautions for safe handling

Usage precautions Keep out of the reach of children. Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. This product is corrosive. Immediate first aid is imperative. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Store locked up. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Store in corrosive resistant container with a resistant inner liner.

Storage class Corrosive storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Calcium carbonate (CAS 471-34-1)
OSHA Permissible Exposure Limit (PEL): TWA 15 mg/m3 (total dust)
OSHA Permissible Exposure Limit (PEL): TWA 5 mg/m3 (respirable dust)
NIOSH Recommended exposure limit (REL): TWA 10 mg/m3 (total dust)
NIOSH Recommended exposure limit (REL): TWA 5 mg/m3 (respirable dust)

Aluminum sulfate (CAS 7783-90-6)
US ACGIH. CAS 10043-01-3. Threshold limit value (TLV-TWA): 1 mg/m3

Silver chloride (CAS 7783-90-6)
OSHA Permissible Exposure Limit (PEL): TWA 0.01 mg/m3 (Silver soluble compounds, as Ag)
NIOSH Immediately Dangerous to Life or Health (IDLH): TWA 10 mg/m3 (Silver soluble compounds, as Ag)
NIOSH Recommended Exposure Limit (REL): TWA 0.01 mg/m3 (Silver soluble compounds, as Ag)
ACGIH Threshold Limit Value (TLV): 0.1 mg/m3 (Silver soluble compounds, as Ag)

Exposure controls

Protective equipment

Appropriate engineering controls Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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Hand protection	Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.
Environmental exposure controls	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Granules.
Color	White.
Odor	Odorless.
Odor threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapor pressure	No information available.
Vapor density	No information available.
Relative density	No information available.
Bulk density	No information available.
Solubility(ies)	No information available.

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Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	No information available.

10. Stability and reactivity

Reactivity	May be corrosive to metals.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	Keep away from heat, sparks and open flame.
Materials to avoid	Water, moisture. Mild steel. Stainless steel. Aluminum. May be corrosive to metals.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Corrosive gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD_{50})	Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD_{50})	Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC_{50})	Based on available data the classification criteria are not met.

Skin corrosion/irritation

Summary	Prolonged contact with moist or wet product may cause burns.
Skin corrosion/irritation	Skin Corr. 1 - H314 Causes burns.

Serious eye damage/irritation

Serious eye damage/irritation	Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.

Respiratory sensitization

Respiratory sensitization	Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization	Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro	Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	None of the ingredients are listed.
NTP carcinogenicity	None of the ingredients are listed.

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OSHA Carcinogenicity	None of the ingredients are listed.

Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard	Not relevant. Solid.

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.
Ingestion	May cause chemical burns in mouth, esophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.
Skin Contact	Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.
Eye contact	Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.

12. Ecological information

Toxicity	Aquatic Acute 1 - H400 Very toxic to aquatic life. Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Persistence and degradability	The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential	No data available on bioaccumulation.
Partition coefficient	No information available.

Mobility in soil

Mobility	No data available.

Other adverse effects

Other adverse effects	None known.

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13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General This product is not covered by the U.S. Department of Transportation regulation on the transport of dangerous goods (49 CFR Part 172). As supplied, this product is consigned under the Limited Quantities provisions.

UN Number

UN No. (DOT) Not applicable.

UN proper shipping name

Proper shipping name (DOT) Not applicable.

Transport hazard class(es)

DOT transport labels
No transport warning sign required.

Packing group

DOT packing group Not applicable.

Special precautions for user

DOT reportable quantity Not applicable.

DOT TIH Zone Not applicable.

15. Regulatory information

United States FIFRA - Pesticide Labeling

This product is a US EPA FIFRA registered pesticide (EPA Reg. No.: 53735-11) and is subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required for an OHSA GHS SDS. The following is the hazard information as required on the FIFRA label:

Signal Word CAUTION

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
Not applicable.

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CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
The following ingredients are listed:

Silver compounds
No RQ Assigned

Aluminum sulfate
Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
Not applicable.

SARA 313 Emission Reporting
Not applicable.

CAA Accidental Release Prevention
Not applicable.

FDA - Essential Chemical
Not applicable.

FDA - Precursor Chemical
Not applicable.

SARA (311/312) Hazard Categories
Skin corrosion or irritation

OSHA Highly Hazardous Chemicals
Not applicable.

US Clean Water Act - Section 307(a)(1) Toxic Pollutants The following ingredients are listed: Silver compounds

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-I)
Not applicable.

California Air Toxics "Hot Spots" (A-II)
Not applicable.

California Directors List of Hazardous Substances
The following ingredients are listed:
Silver compounds

California Hazardous Waste Control Law The following ingredients are listed: Silver compounds

Massachusetts "Right To Know" List
Not applicable.

Rhode Island "Right To Know" List
Not applicable.

Minnesota "Right To Know" List
Not applicable.

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New Jersey "Right To Know" List
Not applicable.

Pennsylvania "Right To Know" List
Not applicable.

Colorado Hazardous Waste Regulation Appendix VIII - Hazardous Waste Constituents	The following ingredients are listed: Silver compounds
Louisiana Reportable Quantity List for Pollutants	The following ingredients are listed: Silver compounds No RQ Assigned
New Jersey Discharge Tax List of Hazardous Substances	The following ingredients are listed: Silver compounds
Massachusetts Oil and Hazardous Materials List	The following ingredients are listed: Silver compounds RQ: (50 lbs)

Inventories

US - TSCA
All the ingredients are listed or exempt.

Calcium carbonate

Aluminum sulfate

US - TSCA 12(b) Export Notification
Not applicable.

16. Other information

Abbreviations and acronyms used in the safety data sheet	TDG: The transport of dangerous goods act IATA: International air transport association. ICAO: Technical instructions for the safe transport of dangerous goods by air. IMDG: International maritime dangerous goods. CAS: Chemical abstracts service. ATE: Acute toxicity estimate. LC_{50}: Lethal concentration to 50 % of a test population. LD_{50}: Lethal dose to 50% of a test population (median lethal dose). EC_{50}: 50% of maximal effective concentration. PBT: Persistent, bioaccumulative and toxic substance. vPvB: Very persistent and very bioaccumulative.
Classification abbreviations and acronyms	Met. Corr. = Corrosive to metals Eye Dam. = Serious eye damage Skin Corr. = Skin corrosion Aquatic Acute = Hazardous to the aquatic environment (acute) Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Revision date	09/15/2021
Revision	04
SDS No.	4831

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Hazard statements in full

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.