

Product Data Sheet



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DUSTGARD® LIQUID

PRODUCTION LOCATION

Ogden, Utah

PRODUCT DESCRIPTION

Produced naturally from the Great Salt Lake, DustGard Liquid is formulated to control dust and stabilize soil on unpaved roads, stockpiles, and other sources of fugitive dust. DustGard Liquid is a light amber liquid with a density of approximately 185 gallons per ton.

PHYSICAL PROPERTIES

Specific Gravity 1.31+/- 0.02
pH (5% Solution) 7.0 - 9.0
Weight 10.7 - 11.1 lbs./gallon

Typical Analysis		Typical		Range
Magnesium Chloride	MgCl ₂	(%)	30.3	28 - 33
Sulfate	SO ₄	(%)	1.9	0 - 2.7
Potassium	K	(%)	0.3	0.1 - 0.5
Water	H ₂ O	(%)	68	64 - 72

METHOD OF ANALYSIS

All testing is from Compass Minerals' internal quality control procedures, which are available upon request.

APPLICATION AND STORAGE

This liquid MgCl₂ product in storage should be agitated regularly to minimize precipitation of undesirable solids/crystals. Application equipment should be washed daily with water. Storage equipment should be rinsed with water to prevent buildup of solids. Aluminum storage tanks or hauling equipment should not be grounded. Over application of MgCl₂ may result in unusually slippery road surfaces and should be avoided.

Product Description and Codes	UPC code	Product Code
Bulk		



SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	Magnesium Chloride Aqueous Solution
Other means of identification	7786-30-3 FREEZGARD LITE CI PLUS FREEZGARD ZERO CI PLUS FREEZGARD LITE CI PLUS LS DustGard DustGard Plus FreezGard Zero FreezGard Lite MagnaPro
Recommended use	Dust suppression, deicing, general industrial, and speciality uses.
Recommended restrictions	None known.
Manufacturer	North American Salt Company A Compass Minerals Company 9900 West 109th Street, Suite 100 Overland Park, KS 66210 US Phone: 913-344-9200
CHEMTREC	1-800-424-9300
CANUTEC	1-613-996-6666

2. Hazards Identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The substance does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental Information	Not applicable.

3. Composition/Information on Ingredients

Mixture

Composition comments The criteria for listing components in this section are: Carcinogens, Respiratory Sensitizers, Mutagens, Teratogens and Reproductive toxins are listed when present at 0.1% or greater; components which are otherwise hazardous according to WHMIS/OSHA are listed when present at 1.0% or greater. Non hazardous components are not listed. The products pertaining to this SDS have various proportions of components which do not meet the listing criteria.

4. First Aid Measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General Information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	No unusual fire or explosion hazards noted.
Hazardous combustion products	May include and are not limited to: Hydrogen chloride. Chlorine gas. Oxides of magnesium.
Explosion data	
Sensitivity to mechanical impact	Not available.
Sensitivity to static discharge	Not available.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling	Avoid contact with eyes, skin and clothing. Use good industrial hygiene practices in handling this material.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a cool, dry and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	<p>TWA PEL: No specific limits have been established for magnesium chloride (a soluble substance). As a guideline, OSHA (United States) has established the following limits which are generally recognized for inert or nuisance dust. Particulates Not Otherwise Regulated (PNOR): 5mg/cu.m. Respirable Dust 8-Hour TWA PEL, 15mg/cu.m. Total Dust 8-Hour TWA PEL.</p> <p>TWA TLV: No specific limits have been established for magnesium chloride (a soluble substance). As a guideline, ACGIH (United States) has established the following limits which are generally recognized for inert or nuisance dust. Particulates (insolubles) Not Otherwise Classified (PNOC): 10mg/cu.m. Inhalable Particulate 8-Hours TWA TLV, 3mg/cu.m. Respirable Particulate TWA TLV.</p> <p>Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. If user operations generate dust, fumes, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.</p>
Individual protection measures, such as personal protective equipment	
Eye/face protection	Safety glasses

Skin protection	
Hand protection	Rubber gloves. Confirm with a reputable supplier first.
Other	As required by employer code.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator or NIOSH-approved filtering facepiece.
Thermal hazards	Not applicable.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance	Liquid
Physical state	Liquid.
Form	Crystalline.
Color	Colorless to Light amber
Odor	Odorless
Odor threshold	Not available.
pH	7 - 9 (5% solution)
Melting point/freezing point	-1 °F (-18.33 °C) (30% solution, periodically mixed to ensure homogeneity)
Initial boiling point and boiling range	Not applicable
	225 °F (107.22 °C)
Pour point	Not available.
Specific gravity	1.24 - 1.34 (H ₂ O = 1)
Partition coefficient (n-octanol/water)	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	Easily soluble in cold water, hot water, methanol, acetone.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and Reactivity

Reactivity	Reactive with oxidizing agents, acids, metals in presence of moisture.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Metals.
Hazardous decomposition products	May include and are not limited to: Hydrogen chloride. Chlorine gas. Oxides of magnesium.

11. Toxicological Information

Information on likely routes of exposure	
Ingestion	Expected to be a low ingestion hazard.

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not classified.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Exposure minutes	Not available.
Erythema value	Not available.
Oedema value	Not available.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Corneal opacity value	Not available.
Iris lesion value	Not available.
Conjunctival reddening value	Not available.
Conjunctival oedema value	Not available.
Recover days	Not available.
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Teratogenicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	Not classified.
Further information	This product has no known adverse effect on human health.
Name of Toxicologically Synergistic Products	Not available.

12. Ecological Information

Ecotoxicity	May be harmful to freshwater aquatic species and to plants that are not saline tolerant.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Mobility in general	Not available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

U.S. Department of Transportation (DOT)

Not regulated as dangerous goods.

Transportation of Dangerous Goods (TDG - Canada)

Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS status

Not Controlled

US federal regulations**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate Hazard - No
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

No

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Safe Drinking Water Act (SDWA)**

Not regulated.

Food and Drug Administration (FDA)

Total food additive
 Direct food additive
 GRAS food additive

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Not regulated.

US. Rhode Island RTK

Not regulated.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Further information For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

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Other information This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard (HCS) adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

This SDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.



GENERAL PREPARATION & APPLICATION GUIDELINES

Surface Preparation:

Recommended Equipment: Motor Grader with a Rotating Teeth Cutting Blade
Pressurized Water/Distributor Truck

MATERIAL

The existing surface should contain a good mixture (gradation) of coarse to fine material with a maximum size of $\frac{3}{4}$ inch down to a fine dust. 18% to 25% of the existing surface material should be a fine dust that passes a -200 size mesh screen.

If new material needs to be added to the existing surface, a good quality $\frac{3}{4}$ inch maximum size "crusher run" material having 18% to 25% of -200 mesh fines should be used. This new material will need to be blended with the existing surface material.

WATER

The surface should first be watered sufficiently to soften the materials and help conserve the fine dust, which is the required binder. The surface should then be bladed sufficiently (1" to 2" depth) to break up the crust on the surface. This will re-mix the existing or existing/new surface materials, remove potholes & washboarding and provide for good drainage. More watering may be necessary during blading if dry conditions exist. Blading dry material is not recommended (materials will segregate and the fines will blow away).

SHAPING

An unpaved road should be crowned and shaped to final grade to form a smooth surface. In most cases a modified A crown is adequate to provide proper drainage. The road surface should slope $\frac{1}{2}$ inch per linear foot from the center of the road. (If the road is not crowned, the surface will be more susceptible to forming potholes, especially at intersections and driveway approaches).

Grading is always required especially if the surface contains hard, crusty or tire polished areas or if other dust control products have previously been used.

Application Guidelines

Recommended Equipment: Pressurized Water/Distributor Truck Equipped with a Rear Mounted Spray Bar
Pneumatic (Rubber Tire) Roller

PRE-WET

The dust control application must penetrate the surface in order to be effective. Water helps to lower the surface tension of the dust control product and allows the dust control application to penetrate. We recommend a pressurized spray bar be used for a more even distribution and deeper penetration.

The freshly bladed surface should be pre-wetted just prior to the dust control application. The number of gallons of water to be applied to the surface prior to the dust control application will often need to equal the number of gallons of the dust control product that is to be applied. An optimum moisture content of 7% (forms a mud ball) in the surface materials is recommended. More water may be needed if dry conditions exist. The timing and amount of water used is dependent upon many circumstances and should be dealt with on an individual basis.

If water is not available for pre-wetting, the dust control treatment should be applied in several lighter passes or in a diluted form.

SPRAY

The recommended application rate for a dust control treatment should not be less than 0.5 gal./sq. yd. The dust control treatment is applied in two 0.25 gal./sq. yd. passes for even distribution and deeper penetration.

For best results, traffic should not be allowed on a treated surface until it has stated to cure. This normally will only be a few hours. Curing is dependent upon outside temperature, wind and humidity. If traffic must immediately use the treated surface, vehicles & speed should be kept to a minimum.

ROLL

After the final 0.25 gal./sq. yd. pass is completed, and enough time has passed for surface curing to begin, rolling the surface with a pneumatic (rubber tire) roller is recommended. Rolling will compact the surface and seal in the moisture created by the combination of the water and dust control treatment. Care should be taken to ensure that the surface has cured long enough so that the roller does not damage the surface while the rolling process is being done. If the new treated surface is "picked up" or sticks to the rubber tires, stop the rolling and allow more time for the surface to cure.

If a pneumatic roller is not available, the treated surface should be turned back to traffic as soon as possible after initial curing. The passing vehicles that use the treated surface will compact and seal the surface. Care should also be taken to ensure that the surface has cured long enough so that the passing vehicles do not damage the new treated surface. Compaction is dependent upon many circumstances and should be dealt with on an individual basis.