SAFETY DATA SHEET

1. Identification

Product identifier DUSTOFF® Dust Suppressant

Other means of identification

SDS number ND11

Synonyms Aqueous Magnesium Chloride and Magnesium Sulfate. * Magnesium Chloride, Magnesium Sulfate.

Recommended use Industrial and agricultural applications

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Cargill Incorporated

Address Minneapolis, MN 55440

Telephone 1-888-385-7258

Website www.cargillsalt.com

Emergency telephone number CHEMTREC (800) 424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards

Hazardous to the aquatic environment, acute hazard	Category 3
Hazardous to the aquatic environment, long-term hazard	Category 3

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture 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) Application of excessive amounts of Dust-Off directly adjacent to or directly upon paved surfaces may result in slippery conditions which present a safety hazard for foot and vehicular traffic.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Water	7732-18-5	63-70
Magnesium chloride	7786-30-3	29-33
Magnesium sulfate	7487-88-9	1.0-3.8

4. First-aid measures

Inhalation In case of inhalation of spray mist: Move person into fresh air and keep at rest. Call a physician if symptoms develop or persist.

Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Give one or two glasses of water if patient is alert and able to swallow. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Accidental exposure or contact might produce: Irritant effects.
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	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
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 water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	This product is not flammable or combustible.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid inhalation of vapors. Keep unnecessary personnel away. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Avoid release to the environment. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. Dike the spilled material, where this is possible. Soak up with absorbent material such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes. Keep away from sulfuric and nitric acids, caustics, ammonia and cyanides. Practice good housekeeping. May evolve chlorine gas when in contact with strong acids or upon heating above 300 degrees F (149 degrees C). A hazardous reaction involving magnesium chloride and 2-furan percarboxylic acid has been reported. Do not apply directly to plant foliage or root zones, as concentrated magnesium chloride solutions may cause partial or complete defoliation. This product is designed to control dust on unpaved surfaces. Application of excessive amounts of Dust-Off directly adjacent to or directly upon paved surfaces may result in slippery conditions which present a safety hazard for foot and vehicular traffic.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Prolonged storage or subjecting the materials to temperatures below 30 degrees F (-1 degree C) can result in the formation of magnesium sulfate crystals.

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	Provide adequate ventilation and minimize the risk of inhalation of mists.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	Provide sufficient ventilation for operations causing mist formation. In case of inadequate ventilation or risk of inhalation of mist, use suitable respiratory equipment with particle filter.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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	Clear liquid.
Physical state	Liquid.
Form	Slightly viscous, brown/amber liquid with a slight saline odor.
Color	Brown or amber.
Odor	Slight saline odor.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	226.4 - 253.4 °F (108 - 123 °C) (760 mm Hg)
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	7.5 mm Hg (86 °F (30 °C))
Vapor density	Not available.
Relative density	1.306 (H2O=1)
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Molecular formula	$MgCl_2$
Molecular weight	95.22
pH in aqueous solution	5.5 - 6.5

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	A hazardous reaction involving magnesium chloride and 2-furan percarboxylic acid has been reported.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Avoid contact with strong acids. Incompatible with sulfuric and nitric acids, caustics, ammonia and cyanides.

Hazardous decomposition products	May evolve chlorine gas when in contact with strong acids or upon heating above 300 degrees F (149 degrees C).

11. Toxicological information

Information on likely routes of exposure

Inhalation	Spray mist may irritate the respiratory system.
Skin contact	Prolonged or repeated skin contact may cause irritation.
Eye contact	Mild eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Eye and skin contact: Exposure may cause temporary irritation, redness, or discomfort.

Information on toxicological effects

Acute toxicity	Ingestion of large amounts can cause gastrointestinal upset and irritation of the stomach.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	May cause slight eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
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.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	Do not apply directly to plant foliage or root zones, as concentrated magnesium chloride solutions may cause partial or complete defoliation.

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

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

15. Regulatory information

US federal regulations

All components are on the U.S. EPA TSCA Inventory List.
This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. Personal protection: A

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

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

Not listed.

SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

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

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

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

Not listed.

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

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

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.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 29-August-2014

Revision date -

Version # 01

HMIS® ratings Health: 1
Flammability: 0
Physical hazard: 0

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Cargill Salt

Technical Information

Dust-Off® Dust Suppressant

DESCRIPTION:

Dust-Off® Dust Suppressant is an aqueous solution whose primary active component is magnesium chloride. It is manufactured by solar evaporation of seawater. It provides excellent dust suppression.

COMPLIANCE:

Dust-Off Dust Suppressant is not approved for human or animal consumption. It is intended for use only as a dust suppressing road treatment and road base stabilizer.

ADDITIVES:

Dust-Off® Dust Suppressant consists primarily of "liquid bitterns," a natural product produced by the evaporation of seawater. Naturally occurring corrosion inhibitors make Dust Off less corrosive than standard calcium and magnesium chloride solutions.

APPLICATIONS:

Dust-Off® Dust Suppressant is intended for use as a dust palliative. It is both hygroscopic and deliquescent, and is thus able to absorb and retain moisture from the air. Its components combine with elements in the soil to increase compaction and thus increase road stabilization. Depending on the quality of the road base and the type of vehicular traffic, one application per year is usually sufficient. On heavily traveled roads a touch-up application may be necessary. This product works best if the road contains the proper proportion of coarse and fine fractions. The road should be graded and crowned for proper drainage. Roads subject to high traffic should be compacted. Oil-base treated surfaces may require special pretreatment for positive penetration. For best results, apply the product using a spreader truck equipped with a pressurized spray bar at the rate of ½ gallon per square yard.

CAUTION: Dust-Off®is a concentrated salt solution and like all salt solutions should be handled with care. Dust-Off® must not be applied to crops or plant life. Application must be performed so that there is no runoff from the intended area. This is especially true in areas where there are adjoining streams or waterways.

Dust-Off® is intended for use on unimproved roads. Applying Dust-Off® to pavement may cause slippery conditions. Care must be taken not to apply Dust-Off® in locations that will track onto pavement. Application should be discontinued before junction with paved roads.

Some soils such as clay, can become slippery when applying Dust-Off®. Consult your distributor on what types of roads and soil types work best with Dust-Off®

PACKAGING AND SHIPPING:

Dust-Off® Dust Suppressant is available only in bulk form. Bulk quantities are shipped by rail or truck.

STORAGE AND HANDLING PRECAUTIONS:

Dust-Off® Dust Suppressant requires normal precautionary measures for the safe handling of liquids, i.e., goggles and flushing of skin contact areas with fresh water. Prolonged storage or subjecting this product to temperatures below 0°F (-17.8°C) can result in the formation of magnesium sulfate crystals.

CHEMICAL ANALYSIS:

Component	Units	Typical	Specification
Total Magnesium (as $MgCl_2$)	%	31.0	29 - 35
Magnesium (as Mg)	%	-	7.4 min.
Chloride (as Cl)	%	-	25.0 max.
Sulfate (as SO_4)	%	1.5	3.0 max
Other	%	-	1.5 max.
Water	%	-	65.5 max.
pH, as is		-	5.5 – 6.5

PHYSICAL PROPERTIES:

Component	Units	Typical	Specification
Density	lbs./gal.	-	10.88- 11.24
Specific Gravity (at 60°/60°F)	SGU	-	1.301 – 1.349

PRODUCT BENEFITS:

Suppresses dust without the need of petroleum-based products.

TECHNICAL ASSISTANCE:

Technical representatives are available for assistance in applications develop- ment, troubleshooting and help in resolving customer service issues.

METHODS OF ANALYSIS:

Methods of analysis and product performance evaluation are taken from the ASTM designations E534-98, from ASTM G31-72, and from the Cargill Central Research Laboratory.

PRODUCING LOCATION: NEWARK, CA

No. 7900 Revised April 2005

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