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2. Hazards Identification

Emergency

Overview

Color:

Clear

Physical State:

Liquid

Odor:

Odorless

Hazards of

product:

WARNING! Causes eye irritation. May cause skin irritation. May be harmful if swallowed. Slipping hazard. Isolate area.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause slight corneal injury. Effects may be slow to heal.

Skin Contact: Brief contact is essentially nonirritating to skin. May cause more severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves). Prolonged

contact
may cause skin irritation, even a
burn.

Skin Absorption: Prolonged skin contact is unlikely to result in
absorption
of harmful amounts. Inhalation: Mist may cause irritation of
upper
respiratory tract (nose and
throat).

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally
as
a result of normal handling operations are not likely to cause
injury;
however, swallowing larger amounts may cause injury. Swallowing may result
in
gastrointestinal
irritation.

3. Composition Information

Component Amount	CAS #	
Calcium chloride %	10043-52-4	28.0 - 42.0
Potassium chloride %	7447-40-7	0.0 - 3.0
Sodium chloride %	7647-14-5	0.0 - 2.0
Water %	7732-18-5	53.0 - 72.0

4. First-aid measures

Eye Contact: Immediately flush eyes with water; remove contact lenses,
if
present, after the first 5 minutes, then continue flushing eyes for at
least
15 minutes. Obtain medical attention without delay, preferably from
an
ophthalmologist.

Skin Contact: Wash skin with plenty of
water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as fine spray.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).

Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-

fire
clean-up situations, refer to the relevant
sections.

Unusual Fire and Explosion Hazards: Not
applicable.

Hazardous Combustion Products: Not
applicable

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small and large
spills:

Contain spilled material if possible. Absorb with materials such as:
Sand.

Collect in suitable and properly labeled containers. Flush residue
with
plenty of water. See Section 13, Disposal Considerations, for
additional
information.

Personal Precautions: Spilled material may cause a slipping hazard.
Isolate
area. Keep unnecessary and unprotected personnel from entering the area.
Use
appropriate safety equipment. For additional information, refer to Section
8,
Exposure Controls and Personal
Protection.

Environmental Precautions: Prevent from entering into soil, ditches,
sewers,
waterways and/or groundwater. See Section 12, Ecological
Information.

7. Handling and Storage

Handling

General Handling: Product shipped/handled hot can cause thermal burns.
Avoid
contact with eyes, skin, and clothing. Do not swallow. Wash thoroughly
after
handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL
PROTECTION.

Storage

Keep container closed. Protect from atmospheric moisture. Product may become a solid at temperatures below 0 deg C (32 deg F) (concentrations above 36% calcium chloride).

8. Exposure Controls / Personal Protection

Exposure

Limits

Component Value	List	Type	
Calcium chloride m3	Dow IHG	TWA	10 mg/
Sodium chloride m3	Dow IHG	TWA	10 mg/

Personal Protection

Eye/Face Protection: Use chemical goggles.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

Hand protection: Use gloves chemically resistant to this material.

Examples

of preferred glove barrier materials include: Polyethylene. Neoprene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrite" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL").

Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of

a
specific glove for a particular application and duration of use in
a
workplace should also take into account all relevant workplace factors
such
as, but not limited to: Other chemicals which may be handled,
physical
requirements (cut/puncture protection, dexterity, thermal
protection),
potential body reactions to glove materials, as well as
the
instructions/specifications provided by the glove
supplier.

Respiratory Protection: Respiratory protection should be worn when there is
a
potential to exceed the exposure limit requirements or guidelines. If
there
are no applicable exposure limit requirements or guidelines, wear
respiratory
protection when adverse effects, such as respiratory irritation or
discomfort
have been experienced, or where indicated by your risk assessment process.
In
misty atmospheres, use an approved particulate respirator. The
following
should be effective types of air-purifying respirators: Particulate
filter.

Ingestion: Use good personal hygiene. Do not consume or store food in
the
work area. Wash hands before smoking or
eating.

Engineering

Controls

Ventilation: Use local exhaust ventilation, or other engineering controls
to
maintain airborne levels below exposure limit requirements or guidelines.
If
there are no applicable exposure limit requirements or guidelines,
general
ventilation should be sufficient for most operations. Local
exhaust
ventilation may be necessary for some
operations.

9. Physical and Chemical Properties

Physical State

Liquid

Color

Clear

Odor

Odorless

Flash Point - Closed Cup applicable Not

Flammable Limits In Air applicable Lower: Not

Upper: Not

applicable

Autoignition Temperature applicable Not

Vapor Pressure 9 - 15 mmHg @ 25 deg C

Literature

Boiling Point (760 mmHg) 110 - 122 deg C (230 - 252 deg F)

Literature .

Vapor Density (air = 1) water Literature Same as

Specific Gravity (H2O = 1) Literature 1.275 - 1.439

Freezing Point

Varies

Melting Point applicable Not

Solubility in Water (by water weight) Literature completely miscible with

pH (undiluted) 9 Estimated

Kinematic Viscosity Estimated 2.6 cSt @ 25 deg C

10. Stability and Reactivity

Stability/
Instability

Stable.

Conditions to Avoid: None known.

Incompatible Materials: Avoid contact with: Sulfuric acid. Corrosive to some metals. Avoid contact with metals such as: Brass. Ferrous metals. Mild steel.

Flammable hydrogen may be generated from contact with metals such as: Zinc.

Sodium. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromate.

Hazardous
Polymerization
Will not occur.

Thermal
Decomposition
Does not decompose.

11. Toxicological Information

Acute
Toxicity

Ingestion
For the major component(s): LD50, Rat 900 - 2,100 mg/kg

Skin
Absorption
For the major component(s): LD50, Rabbit > 5,000 mg/kg

Genetic
Toxicology
The data presented are for the following material: Calcium chloride or CaCl₂.
In vitro genetic toxicity studies were negative. The data presented are for the following material Potassium chloride. In vitro genetic toxicity studies were positive. However, the relevance of this to humans is unknown.

12. Ecological Information

ENVIRONMENTAL

FATE

Data for Component: Calcium
chloride

Movement &
Partitioning

No bioconcentration is expected because of the relatively high
water
solubility. Partitioning from water to n-octanol is not
applicable.

Persistence and

Degradability

Biodegradation is not
applicable.

Data for Component: Potassium
chloride

Movement &
Partitioning

No bioconcentration is expected because of the relatively high
water
solubility. Partitioning from water to n-octanol is not
applicable.

Persistence and

Degradability

Biodegradation is not
applicable.

Data for Component: Sodium
chloride

Movement &
Partitioning

No bioconcentration is expected because of the relatively high
water
solubility. Potential for mobility in soil is very high (Koc between 0
and
50). Partitioning from water to n-octanol is not
applicable.

Persistence and Degradability Biodegradation is not
applicable.

ECOTOXICITY

Data for Component: Calcium
chloride

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged
Toxicity

LC50, bluegill (*Lepomis macrochirus*): 8,350 - 10,650 mg/
L

Aquatic Invertebrate Acute
Toxicity

LC50, water flea *Daphnia magna*: 759 - 3,005 mg/
L

Toxicity to Micro-
organisms

EC50; activated sludge, respiration inhibition: > 1,000 mg/
L

Data for Component: Potassium
chloride

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged
Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 4,236 mg/
L

Aquatic Invertebrate Acute
Toxicity

EC50, water flea *Daphnia magna*, 24 h, immobilization: 590 mg/
L

LC50, water flea *Ceriodaphnia dubia*, 96 h: 3,470 mg/
L

Data for Component: Sodium
chloride

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50 >100 mg/L in the most sensitive species

tested).

Fish Acute & Prolonged

Toxicity

LC50, fathead minnow (*Pimephales promelas*): 10,610 mg/

L

Aquatic Invertebrate Acute

Toxicity

LC50, water flea *Daphnia magna*: 4,571 mg/

L

Toxicity to Micro-

organisms

IC50, OECD 209 Test; activated sludge, respiration inhibition: > 1,000 mg/

L

13. Disposal

Considerations

All disposal practices must be in compliance with all

Federal,

State/Provincial and local laws and regulations. Regulations may vary in

different locations. Waste characterizations and compliance with applicable

laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER,

WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES

OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE

PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS

DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED &

UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed,

permitted: Reclaimer. Waste water treatment system.

14. Transport

Information

DOT Non-

Bulk

NOT

REGULATED

DOT

Bulk

NOT

REGULATED

IMDG

NOT

REGULATED

ICAO/

IATA

NOT

REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard

Yes

Delayed (Chronic) Health Hazard

No

Fire Hazard

No
Reactive Hazard
No
Sudden Release of Pressure Hazard
No

Superfund Amendments and Reauthorization Act of 1986 Title III
(Emergency
Planning and Community Right-to-Know Act of 1986) Section
313

To the best of our knowledge, this product does not contain chemicals
at
levels which require reporting under this
statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania
Hazardous
Substances List and/or Pennsylvania Environmental Hazardous Substance
List:

To the best of our knowledge, this product does not contain chemicals
at
levels which require reporting under this
statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania
Special
Hazardous Substances
List:

To the best of our knowledge, this product does not contain chemicals
at
levels which require reporting under this
statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act
of
1986)

This product contains no listed substances known to the State of
California
to cause cancer, birth defects or other reproductive harm, at levels
which
would require a warning under the
statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act
of
1986)

WARNING: This product (when used in aqueous formulations with a

chemical oxidizer such as ozone) contains a chemical known to the State of California to cause cancer.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Recommended Uses and Restrictions

A calcium chloride product - Dust Control De-icing fluid. For industrial use.

We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

Legend

N/A Not available

W/W Weight/Weight

OEL Occupational Exposure Limit

STEL Short Term Exposure Limit

TWA Time Weighted Average

ACGIH American Conference of Governmental Industrial Hygienists, Inc.

DOW IHG Dow Industrial Hygiene

Guideline

WEEL Workplace Environmental Exposure

Level

HAZ DES Hazard

Designation

Action Level A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

For Additional Information:

Contact: MSDS Coordinator - Univar USA

During business hours, Pacific Time - (425) 889-3400

NOTICE

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END OF MSDS