

SAFETY DATA SHEET



Fire Crystals

Section 1. Identification

Product identifier used on the label : Fire Crystals

Other means of identification : Salt, Calcium Chloride & Calcium Magnesium Acetate (CMA)

Product type : Solid.

Recommended use and restrictions

Identified uses

Melting Snow and Ice.

Supplier's details : Vaporizer LLC.

PO Box 190
Mt. Morris, NY 14510
Tel: 860-564-7225
Web site: vaporizericemelt.com

Emergency telephone number (with hours of operation) : 860-564-7225 Hours-9-4pm EST
VAPORIZERICEMELT.COM

Section 2. Hazards identification

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

Ingredients of unknown toxicity : Not applicable.

Ingredients of unknown ecotoxicity : Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5%

GHS label elements

Signal word : Warning

Hazard statements : Causes eye irritation.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear eye or face protection. Wash hands thoroughly after handling.

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

Storage : Not applicable.

Disposal : Not applicable.

Other hazards which do not result in classification : Not available.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Chemical formula : Not applicable.

CAS number/other identifiers

CAS number : Not applicable.
EC number : Mixture.
Product code : PG-FC50BG

Ingredient name	%	CAS number
Sodium chloride	75 - 91.5	7647-14-5
Calcium chloride	8 - 20	10043-52-4
Calcium magnesium acetate	0.5 - 5	76123-46-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. If irritation persists, get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : May be irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Section 4. First aid measures

- Eye contact** : Adverse symptoms may include the following:
irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides

Special protective actions for fire-fighters : No special precaution is required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Sodium chloride	ACGIH TLV (United States). TWA: 10 mg/m ³ Form: Inhalable fraction. TWA: 3 mg/m ³ Form: Respirable dust OSHA PEL (United States). PEL: 5 mg/m ³ Form: Respirable dust PEL: 15 mg/m ³ Form: Total dust

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Section 8. Exposure controls/personal protection

Environmental exposure controls : 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.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid.

Color : Varies: Blue.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point/boiling range : Not available.

Flash point : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : Not available.

Solubility : Not available.

Partition coefficient: n-octanol/water : Not available.

Section 9. Physical and chemical properties

- Auto-ignition temperature** : Not available.
Decomposition temperature : Not available.
SADT : Not available.
Viscosity : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials, metals and acids.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Calcium chloride	LD50 Oral	Rat	1 g/kg	-
Calcium magnesium acetate	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	3071 mg/kg	-

Irritation/Corrosion

- Skin** : Not available.
Eyes : Not available.
Respiratory : Not available.

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : May be irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
 irritation
 watering
 redness
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.
Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.
Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	61420 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium chloride	Acute EC50 3130000 ug/L Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 52000 ug/L Fresh water	Daphnia - Daphnia magna - 12 hours	48 hours
	Acute LC50 270 mg/L Marine water	Crustaceans - Americamysis bahia - 4 to 5 days	48 hours
	Acute LC50 2110 mg/L Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{oc}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-

Section 14. Transport information

Packing group	-	-	-
Environmental hazards	No.	No.	No.
Special precautions for user	Not available.	Not available.	Not available.
Additional information	-	-	-

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

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): Not determined.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Sodium chloride; Calcium chloride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 Sodium chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard;
 Calcium chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Section 16. Other information

History

Date of issue mm/dd/yyyy	: 07/15/2012
Version	: 1
Prepared by	: KMK Regulatory Services Inc.
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name: CMA Deicer

Product Use: Deicer/Anti-icer

Supplier: Asiatech52 Manufacturing Ltd
Rm 708 Huasheng Building,
No. 398 Hankou Road,
Shanghai
CHINA
Phone: +86-21-63229227

2. Composition / Information on Ingredients

Ingredient(s):	CAS#	Percent by Weight
Calcium Magnesium Acetate	76123-46-1	100

3. Hazards Identification

Not classified as Hazardous according to criteria of work safe in China.
Not classified as Dangerous for transport by road or rail.

4. First Aid Measures

First aid procedures:

Eye Contact: Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention.

Skin Contact: Brush away excess of dry material. Flush with water. Obtain medical attention.

Inhalation: If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention.

Ingestion: Rinse mouth with water, and then drink one or two glasses of water. Obtain medical attention.

General Advice: Not Available

5. Fire Fighting Measures

MATERIAL SAFETY DATA SHEET

Flammable properties:	None-flammable
Auto-Ignition Temperature:	Not Applicable
Flash Point:	Not Applicable
Flammable Limits:	Not Applicable
Products of Combustion:	Not Available
Fire Hazards in Presence of Various Substances:	Not Applicable
Fire Fighting Media and Instructions:	Not Available
Special Remarks on Fire Hazards:	Not Available
Special Remarks on Explosion Hazards:	Not Available

6. Accidental Release Measures

Small Spill:	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill:	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

7. Handling and Storage

Precautions:	Avoid contact with skin and eyes.
Storage:	Keep container tightly closed. Keep container in a cool, well-ventilated area.

8. Exposure Control / Personal Protection

Exposure limits:	Not Available
Engineering control:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal protective equipment	No special protection is normally required. However if the operating conditions create a high airborne concentration, please

MATERIAL SAFETY DATA SHEET

Eye / face protection:	use the following approved protective equipments. Safety glasses.
Hand protection:	Rubber gloves. Confirms with reputable suppliers first.
Skin and body protection:	As required by employer code.
Respiratory protection:	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator or NIOSH-approved filtering facepiece.
General hygiene considerations:	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance:	Granular
Color:	White to Off-White
Form:	Granule
Odor:	Odorless to Acetic(Slight)
Physical state:	Solid
pH:	8-10
Melting point:	Not Available
Boiling point:	Not Available
Flash point:	Not Available
Evaporation rate:	Not Available
Flammability limit in air, lower, % by volume:	Not Applicable
Flammability limit in air, upper, % by volume:	Not Applicable
Vapor pressure:	Not Applicable
Vapor density:	Not Available
Specific gravity:	1.2 (H ₂ O=1)
Solubility (H₂O):	Partially soluble in water
Auto-ignition temperature:	Not Available
Percent volatile:	Not Available

10. Chemical Stability & Reactivity Information

Chemical stability:	Stable under recommended storage conditions.
Instability Temperature:	Not Available
Conditions of Instability:	Not Available
Incompatibility with various substances:	Not Available
Corrosivity:	Non-corrosive in presence of glass.

MATERIAL SAFETY DATA SHEET

Special Remarks on Reactivity: Not Available
Special Remarks on Corrosivity: Not Available
Polymerization: Will not occur.

11. Toxicological Information

Toxicity to Animals: The oral LD₅₀ in rats > 5000mg/litre
Chronic Effects on Humans: Not Available
Other Toxic Effects on Humans: Not Available
Special Remarks on Toxicity to Animals: Not Available
Special Remarks on Chronic Effects on Humans: Not Available

12. Ecological Information

Ecotoxicity: Not Available
BOD5 and COD: Not Available
Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.
Special Remarks on the Products : of Biodegradation: Not Available

13. Disposal Considerations

Waste codes Not Available
Disposal instructions Waste must be disposed of in accordance with federal, state/provincial and local environmental regulations.
Waste from residues / unused products Not Available
Contaminated packaging Not Available

14. Transport Information

Department of Transportation Not regulated as hazardous goods.
Transportation of Dangerous Not regulated as dangerous goods.

MATERIAL SAFETY DATA SHEET

15. Regulatory Information

Criteria of Worksafe China

This product is not classified as a “Hazardous Chemical”.

16. Other Information

Disclaimer

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 instrument. 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.

END OF MSDS