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Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation") and REGULATION (EC) No 1272/2008 (CLP)

Section 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: Haifa-Cal

Trade names: Haifa-Cal GG, Haifa-Cal fertigation, Haifa-Cal Agri

Synonyms: Nitric acid, ammonium calcium salt; Calcium nitrate double salt; Ammonium Calcium Nitrate Decahydrate

Chemical formula: Approx. $5\text{Ca}(\text{NO}_3)_2 \cdot \text{NH}_4\text{NO}_3 \cdot 10\text{H}_2\text{O}$

Fertilizer formula: 15.5-0-0+26CaO; 15.5-0-0+26.5CaO

Product type: Solid (granules)

CAS number: 15245-12-2

EC number: 239-289-5

REACH registration no(s): 01-2119493947-16

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation: Agriculture – fertilizer, component of mixed and liquid fertilizers.
Industries – concrete and cement additive

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

European Importer: Haifa Chemicals Northern Europe
Generaal de Wittelaan 17, bus 16,
B-2800 Mechelen, Belgium
Tel: +32-15-270811
E-mail: hichem@hichem.be


Other Countries Importer

Supplier/Manufacturer: Haifa Chemicals Ltd.
P.O.B 10809, Haifa Bay 26120, Israel
Tel: +972-4-8469616
Fax: +972-4-8469953/5

E-mail address of person responsible for this SDS: info@haifachem.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation): +972-4-8469616
CHEMTREC (U.S.): 1-800-424-9300

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Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance to Regulation(EC) No. 1272/2008 (CLP/GHS)

Ingredient name	GHS Classification
Nitric acid, calcium and ammonium double salt, hydrated form	Acute Tox.4; H302 Eye.Dam.1; H318

Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC

Ingredient name	EU Classification
Nitric acid, calcium and ammonium double salt, hydrated form	Xn; R22 Xi; R41

See section 16 for full text of the R phrases or H statements declared above.

See section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Labeling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms:



Signal word: Danger

Hazard statements: Harmful if swallowed
Causes serious eye damage

Precautionary Statements:

P264: Wash thoroughly after handling

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazard

Substance meets the criteria for BBT according to Regulation (EC) No. 1907/2006, Annex XIII:

Not applicable

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:

Not applicable

Other hazard which do not result in classification:

Not applicable

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Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture:

Product/ Ingredient name	Identifiers	%	EU Classification	GHS Classification
Nitric acid, calcium and ammonium double salt, hydrated form	CAS:15245-12-2 EC: 239-289-5 REACH: 01-2119493947-16	100	Xn; R22 Xi: R41	Acute Tox.4; H302 Eye.Dam.1; H318

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

4.1 Description of first aid measures

- Eyes contact:** In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if irritation occurs.
- Skin contact:** Avoid prolonged or repeated contact with skin. After handling, always wash hands thoroughly with soap and water. Get medical attention if irritation develops.
- Inhalation:** Avoid breathing dust. If inhaled, remove to fresh air.
- Ingestion:** If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eyes contact: Causes serious eye damage.

Inhalation: May give off gas, vapor or dust that is very irritation or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: Harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin contact: Significant effects or critical hazards are not known.

Over-exposure signs/symptoms:

Eyes contact: Adverse symptoms may include the following:


Pain, watering, redness

Inhalation: No special data

Ingestion: Adverse symptoms may include the following:

Stomach pains

Skin contact: Adverse symptoms may include the following: Pain or irritation, Redness, Blistering may occur.

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4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case of inhalation of decomposition products of a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Special treatments: No specific treatment

Section 5: Fire-Fighting Measures

5.1 Extinguishing media

Suitable: In case of fire, use water spray (fog), foam or dry chemical.

Not suitable: N/A

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous thermal decomposition products: Nitrogen oxides, metal oxide/oxides.

5.3 Advice for firefighters

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.

Remark: Move containers from fire area if possible to do so without risk.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing. Ventilate area of spill.

6.2 Environmental precautions

Avoid contact of spilled material and runoff with soil and surface waterways.

6.3 Methods and materials for containment and cleaning up

Small spill: Use a tool to scoop up solid material and place into an appropriate labeled waste container. Do not mix with sawdust or other combustible material. Avoid creating dusty conditions and prevent wind dispersal. Keep out of waterways.

Large spill: As for small spill

Personal Protection in Case of Large Spill: Safety glasses. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product.

6.4 Reference to other sections

See Sections 1 for emergency contact information


See Section 8 for information on appropriate personal protective equipment

See Section 13 for additional waste treatment information

Section 7: Handling and Storage

7.1 Precautions for safe handling

Handling: Avoid creating dusty conditions and prevent wind dispersal. Avoid all possible sources of ignition (spark or flame). Avoid contamination by any source including metals, dust and organic materials.

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Hygiene Measures:

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. See also section 8 for additional information measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Store and use away from heat, sparks, open flame or any other ignition source. Avoid contact with combustible materials and reducing agents. Keep away from acids or bases. Prevent moisture pick-up in handling and storage.

Packaging materials Recommended : Use original container.

7.3 Specific end use(s): N/A

Section 8: Exposure Control / Personal Protection

8.1 Control parameters

Occupational exposure limit values: N/A

Derived effects levels:

Recommended occupational and consumer exposure limit values (following from the preformed CSA):

Exposure pattern	Derived No Effect Level (DNEL)	
	Workers	General population
Oral	N/A	8.33 mg/kg bw/day
Dermal	13.9 mg/kg bw/day	8.33 mg/kg bw/day
Inhalation	24.5 mg/m ³	6.3 mg/m ³

8.2 Exposure controls

Engineering Measures

Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. **Person Protective measures**

Occupational exposure controls:


Respiratory protection: Disposable particulate mask. Be sure to use an approved/certified or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hand protection: Wear protective disposable vinyl gloves to prevent skin exposure.

Eye protection: Wear protective safety glasses.

Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Hygiene measures: Keep away from foodstuffs and beverages. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work; apply skin cream. During use, provide suitable ventilation.

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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.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance: Solid (granules), white or grayish white
 Odour: Odourless
 Odour threshold: Odourless
 pH: 4-8 (Conc. (%w/w): 10) [Acidic to neutral]
 Melting point/Freezing point: >97°C (207°F)
 Initial boiling point/boiling range: >310°C (590°F)
 Flash point: Not applicable
 Evaporation rate: Not volatile (butyl acetate=1)
 Flammability: Not flammable
 Upper/lower flammability or explosive limits: N/A
 Vapor pressure: <0.001 kPa (<0.01 mm Hg) at 20°C (68°F)- Not Volatile
 Vapor density: Not volatile
 Relative Density: >1 (water=1)
 Solubility(ies): Water solubility- 210 g/100g of water at 20°C (68°F)
 Partition coefficient Octanol/Water: <1, the product is more soluble in water
 Auto-ignition temperature: Not applicable
 Decomposition temperature: >150°C (302°F) - release of oxides of nitrogen
 Viscosity: Not viscous
 Explosive properties: Not explosive
 Oxidizing properties: Not oxidizer

9.1 Other information:

Molecular weight: Not applicable
 VOC: Not an organic compounds
 Apparent (Bulk) Density: Approx 1.1 g/cm³

Section 10: Stability and Reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients

10.2 Chemical stability

The product is stable under normal handling and storage conditions described in Section 7.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.


10.4 Conditions to avoid

Extreme humidity, excess heat.

10.5 Incompatible materials

Combustible materials, acids, alkalis, reducing materials, organic materials.

10.6 Hazardous Decomposition products:

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Nitrogen oxides, metal oxide/oxides.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

Product/ingredient name	Test	Species	Dose
Nitric acid, ammonium calcium salt	LD50, Dermal	Rat	>2000 mg/kg
	LD50, oral	Rat	> 300 — < 2000

Irritation and corrosivity:

Inhalation: Significant effects or critical hazards are not known.

Ingestion: Significant effects or critical hazards are not known.

Skin contact: Significant effects or critical hazards are not known.

Eyes contact: Causes serious eye damage.

Sensitization: N/A

Chronic toxicity:

Carcinogenicity: This product does not contain any substances that are considered by IARC, NTP, OSHA, EU or ACGIH to be “probable” or “suspected” human carcinogens.

Mutagenicity: Not applicable.

Reproductive toxicity: Not applicable.

Specific target organ toxicity (single exposure): Not applicable.

Specific target organ toxicity (repeated exposure): Not applicable.

Aspiration hazard: Not applicable.

Other effects

Over exposure signs/symptoms: No specific data.

Target organs: No specific data.

Toxicokinetics

Absorption: Rapidly absorbed


Distribution: Enters the systemic circulation without passing through liver tissues

Metabolism: Rapidly metabolized. Metabolised to the following: Ca⁺², NH₄⁺, NO³⁻

Elimination: The chemical and its metabolites are fully excreted and do not accumulate within the body.

Section 12: Ecological Information

12.1 Toxicity

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Substance name	Toxicity to fish	Toxicity to crustaceans	Toxicity to algae	Toxicity to other aquatic plants	Other toxicity data (birds, bees, plants etc.)
Nitric acid, ammonium calcium salt	LC50 (48h) 447 mg/L	EC50 (48h) > 100 mg/L	EC50 (72 h): > 100 mg/L	-	-

Predicted effect concentrations

Product/ Ingredient name	Type	Compartment Detail	Value	Method Detail
Nitric acid, ammonium calcium salt	PNEC	Fresh water	0.45 mg/l	Assessment Factors
	PNEC	Marine	0.045 mg/l	Assessment Factors

12.2 Persistence and Degradability

Not applicable, since inorganic substance.

12.3 Bioaccumulative potential

Substance name	LogPow	BCF	Potential
Nitric acid, ammonium calcium salt	<1	-	-

12.4 Mobility in soil

Soil/water partition coefficient (Koc) : <1

Mobility: This product may move with surface or groundwater flows because its water solubility is: > 100 g/L

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects


Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: Absent

Substances, which contribute to eutrophication: Nitrates

Section 13: Disposal Considerations

13.1 Waste treatment methods

Provisions relating to waste: Directive 2008/98/EC on waste, of 19 November, 2008: Depending on branch of industry and production process, also other EURAL codes may be applicable

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06 03 14: solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

Product

Methods of disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Hazardous waste: N/A

Packing

Empty containers should be taken for local recycling, recovery or waste disposal.

Section 14: Transport Information

International transport regulations

Regulatory Information	14.1 UN number	14.2 Proper shipping name	14.3 Classes	14.4 Packing group	14.5 Environmental hazard	14.6 Special precautions for user	Additional information
ADR/RID Class	NOT regulated	-	-	-	-	-	
ADNR Class	NOT regulated	-	-	-	-	-	
IMDG class	NOT regulated	-	-	-	-	-	
IATA class	NOT regulated	-	-	-	-	-	

14.7 Transport to bulk according to Annex II of MARPOL 79/78 and the IBC Code

Not applicable

Section 15: Regulatory Information


15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use

EU Regulation(EC) No.1907/2006 (REACH), No 1272/2008 (CLP)

15.2 Chemical safety assessment

In accordance with REACH article 14, a Chemical Safety Assessment has been carried out for this substance.

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Section 16: Other Information

Full text of R-phrases referred to in sections 2 and 3:

R22: Harmful if swallowed
R41: Risk of serious damage to eyes

Safety phrases:

S13: Keep away from food, drink and animal feedingstuffs
S25: Avoid contact with eyes
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36: Wear suitable protective clothing
S39: Wear eye/face protection
S46: If swallowed, seek medical advice immediately and show this container or label

Full text of Hazards Statements referred to in sections 2 and 3:

H302: Harmful if swallowed.
H318: Causes serious eye damage

Precautionary Statements:

P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Training advice: Before using/handling the product one must read carefully present MSDS.

Recommended restriction: N/A

Key Legend Information:

ACGIH- American Conference of Governmental Industrial Hygienists
OSHA- Occupational Safety and Health Administration
NTP- National Toxicology program
IARC- International Agency for Research on Cancer
ND- Not Determined
N/A- Not available
R-phrases- Risk phrases
S-phrases- Safety phrases

Date of issue: 26th May 2010
Date of revision: 19th December 2010
Version no. 3

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.