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 GG

Trade names: Haifa-Cal GG

Product type: Solid (granules)

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
Fax: +32-15 270815
E-mail: NorthWestEurope@haifa-group.com

Other Countries Importer

Supplier/Manufacturer:

Haifa Chemicals Ltd.
P.O.Box 15011, Matam-
Haifa, 31905, Israel
Tel: 972-74-7373737
Fax: 972-74-7373733
E-mail: Regulatory@haifa-group.com

E-mail address of person responsible for this SDS: Regulatory@haifa-group.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation): +972-74-7373737

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	CLP/GHS Classification
Haifa-Cal	Acute Tox.4; H302 Eye.Dam.1; H318

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

Precautionary Statements:
P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves and eye protection.
P330: Rinse mouth.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.

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

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture:

Prodact/ Ingredient name	Identifiers	%	EU Classification	CLP/GHS Classification
Nitric acid, calcium and ammonium double salt, hydrated form	CAS number:15245-12-2 EC number: 239-289-5 REACH registration no(s): 01-2119493947-16	80-85	Xn; R22 Xi; R41	Acute Tox.4; H302 Eye.Dam.1; H318
Calcium nitrate tetrahydrate	CAS number:13477-34-4 EC number: 233-332-1 REACH registration no(s): 01-2119495093-35	12-13	O; R08 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.
See section 16 for the full text of the R-phrases and H-statements declared above.

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: Remove from site of exposure to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration. Get medical attention.

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

Causes serious eye damage. 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. Harmful if swallowed. May cause burns to mouth, throat and stomach.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote, contact Poisons Information Center. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

5.1 Extinguishing media

Suitable: In case of fire use large quantities of water

Not suitable: Do not use chemical extinguisher , or foam, or steam, or sand.

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous thermal decomposition products: oxides of nitrogen, oxides of calcium.

5.3 Advice for firefighters

Special protective equipment for fire fighters: Fire-fighters should wear appropriate protective equipment and selfcontained 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. Avoid dust formation. Avoid breathing dust.

6.2 Environmental precautions

Avoid contact of spilt 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 a 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. Avoid contact with skin and eyes. Wash thoroughly after handling.

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

Deraived effects levels:

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

Nitric acid, calcium and ammonium double salt, hydrated form:

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/m³	6.3 mg/m³

8.2 Exposure controls

Enginnering 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:

Respiratory protection: Disposable particulate mask. Be sure to use an approved/certified or equivalent equipment. 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.

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: White solid, granule
Odour: Odourless
Odour threshold: Odourless
pH: N/A
Melting point/Freezing point: >400°C*
Initial boiling point/boiling range: Not determined, no melting up to 300°C*
Flash point: Not applicable
Evaporation rate: N/A
Flammability: Not flammable
Upper/lower flammability or explosive limits: N/A
Vapor pressure: Considered negligible (based on high melting point)
Vapor density: Not relevant
Relative Density: 2.05
Solubility(ies): Water solubility: 100 g/l at 20°C
Partition coefficient Octanol/Water: Not relevant as the substance is inorganic
Auto-ignition temperature: Will not auto-ignite between room temperature and melting temperature (based on molecular structure)
Decomposition temperature: N/A
Viscosity: Not applicable to solids
Explosive properties: Not explosive
Oxidizing properties: Not oxidizer

9.1 Other information:

Surface tension: Not surface active (based on molecular structure)

*Information relating to Nitric acid, ammonium calcium salt.

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

Organic combustible substances, strong acids, strong alkalis

10.6 Hazardous Decomposition products

In the event of fire: see section 5.

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 LD50, Oral	Rat Rat (female)	>2000 mg/kg > 300 and < 2000 mg/kg

Skin corrosion/irritation: N/A

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitization: N/A

Germ cell mutagenicity:
Nitric acid, calcium and ammonium double salt, hydrated form: Not mutagenic.
Nitric acid, ammonium calcium salt is not mutagenic in Salmonella typhimurium strains TA 1535, TA 1537, TA 98 and, TA 100 and E. Coli WP2 uvr A with and without metabolic activation. Tests were performed according to OECD 471 and EU B.13/14 guidelines. No cytotoxicity was observed but test was performed up to limit concentrations (5000 microg/plate). No chromosomal aberrations were induced in human lymphocytes tested with and without metabolic activation according to OECD 473 and B.10 guidelines. No toxicity was observed up to and including the highest precipitating tested dose in the absence and presence of S9, 3 hr treatment/24 hr fixation. However toxicity was observed at dose levels of 3330 µg/ml and above in the absence of S9 for the continuous treatment of 24 and 48 hr. A mouse lymphoma assay is currently running with the substance. However, an MLA study has been performed with potassium nitrate (according to OECD guideline 476 and EC guideline B.17), showing no effects on the thymidine kinase locus in L5178Y mouse lymphoma cells. Test concentrations were up to 0.01M, limit dose, with no toxicity.

Carcinogenicity: Nitric acid, calcium and ammonium double salt, hydrated form: No carcinogenicity study needs to be proposed as nitric acid, ammonium calcium salt is not genotoxic.

Reproductive toxicity:
Nitric acid, calcium and ammonium double salt, hydrated form: No reliable study with nitric acid, ammonium calcium salt is present. An OECD 422 study with rats shows no effects at all up to doses of 1500 mg/kg bw/day of potassium nitrate. No effects were found on reproduction parameters, neither embryotoxic or developmental effects were seen. Although in several other less reliable studies, this is not always suppoted, these studies show a very limited description of methods and results.
No reliable study with nitric acid, ammonium calcium salt is present. An OECD 422 study with rats shows no effects at all up to doses of 1500 mg/kg bw/day of potassium nitrate. No effects were found on reproduction parameters, neither embryotoxic or developmental effects were seen.

Specific target organ toxicity (single exposure): N/A

Specific target organ toxicity (repeated exposure): N/A

Aspiration hazard: N/A

Other effects:
Eyes contact: Adverse symptoms may include the following: pain, watering, redness
Ingestion: Adverse symptoms may include the following: stomach pains

Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur.

Toxicokinetics

Nitric acid, calcium and ammonium double salt, hydrated form:

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

Substance name	Toxicity to fish	Toxicity to crustaceans	Toxicity to algae
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	Assessment Factor
Nitric acid, ammonium calcium salt	PNEC	Fresh water	0.45 mg/l	1000
	PNEC	Marine	0.045 mg/l	10000

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
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

14.1 Un number

ADR/RID: - IMDG: - IATA: -

14.2 Proper shipping name

ADR/RID: Not regulated

IMDG: Not regulated

IATA: Not regulated

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packing group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazard

Marine Pollutant: Not known

14.6 Special precautions for user

Not available

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

Not available

Section 15: Regulatory Information

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

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 Nitric acid, calcium and ammonium double salt, hydrated form.

Section 16: Other Information

Full text of R-phrases referred to in section 3:
O- oxidizing
Xn- harmful
Xi- irritating
R08: Contact with combustible material may cause fire.
R22: Harmful if swallowed.
R41: Risk of serious damage to eyes.

Full text of Hazards Statements referred to in section 3:
Acute Tox.- acute toxicity
Eye Dam,- serious eye damage
Ox. Sol.- oxidizing solid
H272: May intensify fire; oxidiser.
H302: Harmful if swallowed.
H318: Causes serious eye damage

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

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