Revision date: 11th November 2014 Version 3 Supersedes version 2 dated 20 July 2014

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/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: Potassium Nitrate
Trade names: Multi-K. PONI, Hi-Ceramic, K-Power
Synonyms: Nitric acid, potassium salt; Nitrate of potash
Chemical formula: KNO_3

Fertilizer formula: 13-0-46; 13.5-0-46.2; 13-0-45;

Product type: Solid, crystalline

CAS number: 7757-79-1

EC number: 231-818-8

REACH registration no(s): 01-2119488224-35

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

Use of the substance/preparation: Fertilizer. Heat treatment salts (steel and rubber manufacture), oxidizing flux (metallurgy). Heat transfer salts, energy storage. Ceramics (tiles, glazes), glass (strengthening, cathodes ray tubes, liquid crystals).

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

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): +972-48469603/4 (24/7)

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
Potassium nitrate	Ox. Sol. 3 H272

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

Ingredient name	EU Classification
Potassium nitrate	O; R08

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: Warning
Hazard statements:
H272: May intensify fire; oxidizer

Precautionary Statements:
P220: Keep away from combustible materials

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	GHS Classification
Potassium nitrate	CAS number: 7757-79-1 EC number: 231-818-8 REACH :01-2119488224-35	100	O; R08	Ox. Sol. 3 H272

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

Inhalation: Not known significant effects or critical hazards.

Ingestion: Not known significant effects or critical hazards.

Skin contact: Not known significant effects or critical hazards.

Eyes contact: Irritating to eyes.

Over-exposure sigh/symptoms:

Eyes contact: No special data

Inhalation: No special data

Ingestion: No special data

Skin contact: No special data

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case if inhalation of decomposition products I a fire, symptoms may be delayed. The exposure 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: Use an extinguishing agent suitable for surrounding fire.

Not suitable: N/A

5.2 Special hazards arising from the substance or mixture

Contact with combustible material may cause fire. This material increases the risk of fire and may aid combustion.

Hazardous thermal decomposition products: Oxides of potassium and oxides of nitrogen.

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

Do not let this chemical enter the environment.

6.3 Methods and materials for containment and cleaning up

Small spill: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

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: Minimize dust generation and accumulation. Do not breathe dust. Avoid contact with skin and eyes. Wash thoroughly after handling. Do not permit eating/drinking/smoking near the material.

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: Keep containers tightly closed, in a dry, cool and well ventilated place.

Do not store together with acid, alkalis, reducing agents, organic materials and combustible materials.

Protect from moisture.

Use original container.
Keep away from heat

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):

Exposure pattern	Derived No Effect Level (DNEL)	
	Workers	**General population**
Oral	N/A	12.5 mg/kg bw/day
Dermal	20.8 mg/kg bw/day	12.5 mg/kg bw/day
Inhalation	36.7 mg/m³	10.9 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

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.

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 (crystalline/powder/prills), white
Odour: Odorless
Odour threshold: Odorless
pH: 3 – 11 (Conc. (% w/w): 1) [Acidic to basic]
Melting point/Freezing point: 335°C
Initial boiling point/boiling range: Not applicable
Flash point: Not applicable
Evaporation rate: non-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 - Not Volatile
Vapor density: non-volatile
Relative Density: 2.11 g/cm^3
Solubility(ies): Water solubility >100 g/l at the temperature of 25°C
Partition coefficient Octanol/Water: The product is more soluble in water, log (octanol/water) <1
Auto-ignition temperature: The product cannot cause spontaneous ignition
Decomposition temperature: > 400°C
Viscosity: Non-viscous substance
Explosive properties: Not explosive
Oxidizing properties: Oxidizer

9.2 Other information:
Molecular weight: 101.10
Miscibility: Soluble in water
VOC: Not an organic compound
Apparent (Bulk) Density: 0.9-1.2 g/cm^3

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
Dusting conditions, extreme humidity, and excess heat.

10.5 Incompatible materials
Strong acids, strong alkalis, moisture, reducing agents and combustible materials

10.6Hazardous Decomposition products:
Under fire- oxides of nitrogen, oxides of potassium, irritant and toxic fumes.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

Product/ingredient name	Test	Species	Dose
Potassium nitrate	LD50, Oral LD50, Dermal LC50, Inhalation	Rat Rat Rat	2000 mg/kg 5000 mg/kg >527 mg/m³ air, dust, 4h

Irritation and Corrosivity:
Inhalation: Not known significant effects or critical hazards.

Ingestion: Not known significant effects or critical hazards.

Skin contact: Not known significant effects or critical hazards.

Eyes contact: Irritating to eyes.

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: N/A

Target organs: May cause damage to mucous membranes.

Toxicokinetics (absorption, metabolism, distribution and elimination):
Nitrate is reduced to nitrite by the enzyme nitrate reductase. After ingestion, nitrates are reduced to nitrites by bacteria in the lower intestine of the adult. However, in babies, which have a physiological gastric achlorhydria (lack of HCl in the stomach), the reduction occurs in the stomach and duodenum from which the nitrites are readily absorbed into the blood stream. Furthermore, methemoglobin-reductase (NADHcytochrome b5 reductase) in infants has not yet reached full activity. After absorption, nitrites convert oxyhemoglobin into methemoglobin and thus interfere with oxygen transport in the blood, resulting in methemoglobineamia (“blue baby syndrome”). Nitrites can also cause vasodilation, which, like methemoglobineamia, is dose-related.
Based on low MW, high water solubility, assumed low logPow high absorption is expected. However, the ion formation of the substance inmediately when in contact with a fluid decreases the absorption. Therefore, 50% absorption is taken for oral, dermal and inhalation exposure.

Section 12: Ecological Information

12.1 Toxicity

Substance name	Toxicity to fish	Toxicity to crustaceans	Toxicity to algae	Toxicity to other aquatic plants	Other toxicity data (birds, bees, plants etc.)
Potassium nitrate	LC50/96h, fish: 1378 mg/L potassium nitrate	LC50/EC50/48h, daphnia: 490mg/L	EC50/LC50: 1700 mg/L (NOEC)	-	-

Predicted effect concentrations

Prodact/ Ingredient name	Type	Compartment Detail	Value	Method Detail
Potassium nitrate	PNEC	Fresh water	0.45 mg/l	Assessment Factors
	PNEC	Marine	0.045 mg/l	Assessment Factors

12.2 Persistence and Degradability

In principle only abiotic degradation processes are relevant for the substance. In aquaeous solutions, the substance will dissociate into potassium and nitrate ions. Under anoxic conditions, denitrification occurs and nitrate is ultimately converted into molecular nitrogen as part of Nitrogen cycle.

12.3 Bioaccumulative potential

Substance name	LogPow	BCF	Potential
Potassium nitrate	<1	-	Not expected to bioaccumulate

12.4 Mobility in soil

Soil/water partition coefficient (Koc) : Nitrates has a low potential for adsorption. Portion not taken up by plants, can leach to groundwater.

Mobility: N/A

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

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	1486	Potassium nitrate	5.1	III	EAC: 1Z	-	-
ADNR Class	1486	Potassium nitrate	5.1	III		-	-
IMDG class	1486	Potassium nitrate	5.1 Group B	III	EMS: F-A, S-Q	-	-
IATA class	1486	Potassium nitrate	5.1	III		-	-

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.

Section 16: Other Information

Full text of R-phrases referred to in sections 2 and 3:
R08: Contact with combustible material may cause fire.

Safety phrases:
S17: Keep away from combustible material.

Full text of Hazards Statements referred to in sections 2 and 3:
H272: May intensify fire; oxidizer.

Precautionary Statements
P220: Keep/Store away from clothing/combustible materials.

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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