Safety Data Sheet according to OSHA-GHS (29 CFR part 1910.1200 HCS 2012)

PRODUCT NAME **SODIUM POTASSIUM NITRATE**

Product Code: 003/01-US

Date of issue: July 2013 Supersedes: -

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier Sodium Potassium Nitrate / SPO

Qrop™ K Plus

Qrop™ KaliChili

Recommended uses:

Industrial use in formulation of preparations, intermediate use and end-use in industrial settings.

Industrial end-use as energy storage salt.

Professional use in formulation of fertilizer preparations and end-use as fertilizer

Restrictions on uses:

Food additive; reagent in waste water treatment.

Supplier SQM North America
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Atlanta, GA 30339

Company Telephone/Fax (770) 916 9400 / (770) 916 9404

Emergency Telephone Number (800) 424 9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification of the chemical in accordance with 29CFR §1910.1200

Hazard classes and Hazard categories	Hazard statements
Oxidizing solid, Cat. 3	May intensify fire; oxidizer
Midly irritating to eyes, cat. 2B	Causes eye irritation.

Label elements

Hazard pictograms

Signal word Warning

Hazard Statements May intensify fire; oxidizer
Causes eye irritation.

Precautionary Statements

Keep away from flammable / combustible / reducing materials.

Wear eye protection. Wash hands and face thoroughly after handling.

In case of fire: use any suitable mean for extinguishing surrounding fire. Spray water for small fires. For large fires flood with abundant water.

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

If eye irritation persists: Get medical advice/attention.

Dispose of contents/container according to local/state/federal regulations.

Other hazards

None

Classification of the relevant ingredients of the mixture in accordance with 29CFR §1910.1200

Sodium nitrate	Oxidizing solid, cat. 3; Midly irritating to eyes, cat. 2B
Potassium nitrate	Oxidizing solid, Cat. 3

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a mixture/preparation

Substance name	CAS No	EC No	Concentration
Sodium nitrate	7631-99-4	231-554-3	10-70%
Potassium nitrate	7757-79-1	231-818-8	30-90%
Chloride (Cl^-)			< 1.3 %
Sulphate (SO_4^{+2})			< 2 %
Magnesium (Mg^{+2})			< 0.5 %
Perchlorate (ClO_4^-)			0.01 -0.5 %

For specific details on composition according to the product grade, see product data sheet

4. FIRST AID MEASURES

Description of first aid measures

General information

In case of persisting adverse effects consult a physician.

Never give anything by mouth to an unconscious person or a person with cramps.

In case of inhalation

Remove to fresh air and keep at rest in a position comfortable for breathing.

Get medical attention for any breathing difficulty.

In case of skin contact

Wash with plenty of soap and water. Remove contaminated, saturated clothing immediately.

If skin irritation occurs: Get medical advice/attention.

In case of eye contact

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

If eye irritation persists: Get medical advice/attention.

In case of ingestion

Rinse mouth immediately and drink plenty of water. Do not induce vomiting.

Most important symptoms and effects, both acute and delayed

The following symptoms may occur:

In case of inhalation	Irritation to respiratory tract	
	Delayed lung effects after short term exposure to thermal degradation products	
In case of skin contact	May cause redness or irritation	
In case of eye contact	May cause redness or irritation	
In case of ingestion	Ingestion of large amounts may cause:	Gastrointestinal disturbances

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media:	Use any suitable mean for extinguishing surrounding fire. Spray water for small fires. For large fires flood with abundant water.
Unsuitable material:	None, but attention should be paid to compatibility with chemicals surrounding.

Specific hazards arising from the chemical

Oxidizer. Contact with combustible materials will not cause spontaneous ignition, however, sodium nitrate will enhance an existing fire.

Thermal decomposition can lead to the escape of toxic/corrosive gases and vapours.

Thermal decomposition products: Nitrogen oxides (Knox), sodium and potassium nitrite, sodium and potassium oxides.

Protective equipment and precautions for firefighters

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (self contained breathing apparatus (SCBA)).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Provide adequate ventilation. Wear personal protection equipment (Section 8).

Environmental precautions

Do not allow to enter into surface water or drains. Ensure waste is collected and contained.

Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal or recovery.

Unsuitable material for containment/taking up: Do not absorb in saw-dust or other combustible absorbents.

Other information

None

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid generation of dust. Provide adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling. Do no eat, drink or smoke when using this product. Keep away from flammable, combustible and reducing substances.

Conditions for safe storage, including any incompatibilities

Keep/store only in original container. Store in a well-ventilated place. Keep container tightly closed.

Do not store together with: Combustible substance, reducing agents

Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and Section 15 for more information regarding California State regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Occupational exposure limits

Sodium nitrate and potassium nitrate:

OSHA	PEL	Not Established	
	STEL/ceiling	Not Established	
ACGIH	TWA	Not Established	(2012 TLVs® and BEIs®)
	STEL/ceiling	Not Established	(2012 TLVs® and BEIs®)

Derived No-Effect Level (DNEL) suggested by the manufacturer

Workers (industrial/professional):	
DNEL Human, dermal, long term (repeated):	20.8 mg/kg/day (systemic)
DNEL Human, inhalation, long term (repeated):	36.7 mg/m^3 (systemic)

Derived No-Effect Level (DNEL) is the level of exposure to the substance above which humans should not be exposed.

Engineering controls

Use exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protective Equipment

Eye/face protection	Chemical goggles required all the time.
Skin Protection	Nitrile rubber gloves, over 0.11 mm thickness, > 480 min breakthrough time, recommended.
Respiratory Protection	Wear respiratory protection, where airborne concentrations are expected to exceed exposure limits

General Hygiene Considerations

Avoid contact with eyes and skin. Wash hands thoroughly after handling. Have eye-wash facilities immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid, prilled
Colour	Pink
Odour	Odourless
Odour Threshold	No applicable
pH value	6-9 (5% aqueous solution)
Melting point / freezing range	No data available
Boiling temperature / boiling range	Not applicable
Flash point	Not applicable
Vapourisation rate / Evaporation rate	No data available
Flammable solids	Not flammable
Explosion limits (LEL, UEL)	Not applicable
Vapour pressure	Not available
Vapour density	No data available
Density	1.99-2.03 at 20°C/68°F
Solubility	> 100 g/L at 20°C/68°F (water)
Partition coefficient n-octanol /water	Not applicable
Auto Ignition temperature (AIT)	Not applicable
Decomposition temperature	> 600°C/1112°F
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidising properties	Oxidizer

Other information

None

10. STABILITY AND REACTIVITY

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stable under normal storage and temperature conditions.

Possibility of hazardous reactions

None identified

Conditions to avoid

Keep away from flammable, combustible and reducing substances.

Incompatible materials

Flammable, combustible and reducing substances under specifc conditions.

Hazardous decomposition products

Thermal decomposition products: Nitrogen oxides (Knox), sodium and potassium nitrite, sodium and potassium oxides.

11. TOXICOLOGICAL INFORMATION

The following information mostly refers to the major component of the product.

Likely routes of exposure (inhalation, ingestion, skin and eye contact)

Eye contact, skin contact and inhalation. Exposure by ingestion is not expected to occur through normal professional use.

Symptoms related to the physical, chemical and toxicological characteristics

May be irritant to the respiratory tract. May cause redness or irritation to the skin and eyes. Ingestion of large amounts may cause gastrointestinal disturbances. May cause delayed lung effects after short term exposure to thermal degradation products.

Information on toxicological effects from short and long term exposure

There is no data for the mixture itself.

Acute toxicity			Species:	Method:
Acute oral toxicity	LD50:	> 2000 mg/kg bw	Rat.	OECD Guideline 425
Acute dermal toxicity	LD50:	> 5000 mg/kg bw (Potassium nitrate)	Rat.	OECD Guideline 402
Acute inhalation toxicity	LC50:	> 0.527 mg/L (4-h) (Potassium nitrate) (maximum achievable concentration)	Rat.	OECD Guideline 403
Assessment / classification:		Based on available data, the classification criteria are not met		

Irritant and corrosive effects			
Irritation to the skin	Result	Species:	
Equivalent/similar to OECD guideline 404	non-irritant.	Rabbit.	Data obtained by analogy conclusion
Irritation to eyes	Result	Species:	
OECD Guideline 437	non-irritant.	In vitro study	
OECD Guideline 405	Mild Irritant	Rabbit.	
Assessment / classification:	Midly irritating to eyes, category 2B: Causes eye irritation.		

Respiratory or skin sensitisation			
Skin sensitization	Result	Species:	
OECD Guideline 429	not sensitising.	Mouse.	(Sodium nitrate)
Respiratory sensitisation	No information available.		
Assessment / classification:	Based on available data, the classification criteria are not met		

Genetic effects			
In-vitro genotoxicity	Method	Result	
Gene-mutations microorganisms	bacterial reverse mutation assay	negative	(Potassium nitrate)
Gene-mutations mammalian cells	OECD Guideline 476/EU B.17	negative	(Potassium nitrate)
Chromosome aberr. mammalian cells	Ishidate & Odashima (1977)	negative	(Potassium nitrate)
Sister Chromatid Exchange (SCE)	Equivalent or similar to OECD 479	negative	(Potassium nitrate)

Assessment / classification:

Overall assessment of data, indicates that sodium nitrate and potassium nitrate are not genotoxic *in vitro* and *in vivo* .

Based on available data, the classification criteria are not met

Reproductive toxicity

Data obtained from potassium nitrate. No reliable data available for sodium nitrate.

Adverse effects on sexual function and fertility

OECD guideline 422.	NOAEL(C):	1500 mg/kg/d	Rat.

Adverse effects on developmental toxicity

OECD guideline 422.	NOAEL(C):	1500 mg/kg/d	Rat.

At the highest dose tested, no effects on fertility or development were observed in this repeated dose toxicity study. Data from other nitrate substances are in line with this study.

Assessment / classification: Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure)

Practical experience / human evidence

No relevant effect have been observed after single exposure to potassium nitrate or sodium nitrate.

Assessment / classification: Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure)

Several oral repeated dose studies with sodium nitrate are available, however, most of them lack of reliability.

A reliable study with potassium nitrate did not show effects at highest dose tested.

OECD guideline 422.	Effect dose:	Organs affected:
NOAEL(C):	1500 mg/kg bw/day	None

Assessment / classification: Based on available data, the classification criteria are not met

Aspiration hazard

Physicochemical data and toxicological information does not indicate an aspiration hazard.

Assessment / classification: Based on available data, the classification criteria are not met

Carcinogenicity

No substance related neoplastic lesions were observed in a chronic toxicity study (literature information)

International Agency for Research on Cancer (IARC)	Inadequate animals and humans evidence
National Toxicology Program (NTP)	Not listed
29 CFR part 1910, subpart Z	Not listed
California Proposition 65	Not listed
WHO (2003) Nitrate in drinking water	No association between nitrate exposure in humans and the risk of cancer
Assessment / classification:	Based on available data, the classification criteria is not met

Other Toxicological Information

This product contains trace amounts of naturally-occurring perchlorate and iodate. Like other goitrogenic substances, perchlorate may affect iodine uptake by thyroid under specific conditions.

12. ECOLOGICAL INFORMATION

The following information mostly refers to the major component of the product.

Ecotoxicity

Aquatic Toxicity

96-h LC50	1378 mg/L	*Poecilia reticulata* (freshwater fish)	(literature information)
48-h EC50	490 mg/L	*Daphnia magna* (fresh water flea).	(literature information)
10 d EC50	> 1700 mg/L	Several algae species	(literature information)
Assessment / classification		Based on available data, the classification criteria are not met	

Persistence and degradability

In aqueous compartments, the components of the mixture will dissociate into sodium, potassium and nitrate ions. Other minor compounds are also expected to be dissociated in their corresponding ions. Sodium and potassium ions are not subject to further degradation. Under anoxic conditions, nitrate is subjected to denitrification and is ultimately converted into molecular nitrogen as part of the nitrogen cycle. Nitrate and other oxyanions impurities are likely to be found in oxic compartments.

Bioaccumulative potential

Nitrate has a low potential for bioaccumulation based on physicochemical properties (high water solubility).

Mobility in soil

Nitrate has a low potential for adsorption. Portion not taken up by plants, can leach to groundwater. Sodium and potassium can participate in ion exchange processes.

Other adverse effects

Excess nitrate leaching may enrich waters leading to eutrophication.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable federal and state laws.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal method in compliance with applicable regulations.

Sodium nitrate waste exhibiting the characteristic of ignitability has the EPA Hazardous Waste Number of D001 according to the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and Section 15 for more information regarding California State regulations.

14. TRANSPORTATION INFORMATION

US DOT (49CFR part 172)

UN-No.	1499
UN Proper Shipping Name	SODIUM NITRATE AND POTASSIUM NITRATE MIXTURES
Hazard class	5.1
Packing group	III
Hazard label(s)	5.1 (oxidizer)
Special marking	No
Special Provision	A1; A29; IB8; IP3; T1; TP33; W1

International Maritime Organization (IMDG Code)

UN-No.	1499
UN Proper Shipping Name	SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE
Hazard class	5.1
Packing group	III
Marine pollutant	No
Hazard label(s)	5.1 (oxidizer)
Special marking	No
Special Provision	964

International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA)

UN-No.	1499
UN Proper Shipping Name	SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE
Hazard class	5.1
Packing group	III
Hazard label	5.1 (oxidizer)
Special marking	No

Special handling procedure

None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Other special precautions

None

15. REGULATORY INFORMATION

US Federal

SARA Title III Rules

Section 311/312 Hazard Classes

Acute Health Hazard	Yes (Irritant)
Chronic Health Hazard	No
Fire Hazard	Yes (Oxidizer)
Release of Pressure	No
Reactive Hazard	No

Section 313 Toxic Chemicals

N511 Nitrate compounds (water dissociable; reportable only when in aqueous solution)

Section 302 Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Not listed

NFPA 704/2012: National Fire Protection Association

Health	1
Fire	0
Instability	0
Special	OX

US State Regulations

California Proposition 65	Sodium nitrate and potassiom nitrate are not listed
California Code of Regulations Title 22 (Health & Safety Code), Chapter 33	See http://www.dtsc.ca.gov/hazardouswaste/perchlorate/

Canada

Ingredient Disclosure List:	Sodium nitrate and potassium nitrate are listed
WHMIS Classification:	Class C (Oxidizer), D2B (Eye irritation)

This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

European Union

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Hazard classes and Hazard categories	Hazard statements
Ox. Sol. 3	H272
Eye Irrit. 2	H319

Chemical Inventories

United States TSCA	All ingredients are listed
Canada DSL	All ingredients are listed
European Union (EINECS)	All ingredients are listed
China (IECS)	All ingredients are listed
Japan (METI)	All ingredients are listed
Korea (KECI)	All ingredients are listed

16. OTHER INFORMATION

This SDS complies with 29 CFR part 1910 subpart Z (2012), Canada Controlled Products Regulations (2010) and ANSI Standard Z400.1-2004

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Preparation date	July 2013

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Indication of changes

New