



SAFETY DATA SHEET

PRODUCT NAME

Document Code / Version:

Date of issue:

QROP KS

140/02-US

April 2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier QROP KS
QROP KN
QROP KS 12-0-46
QROP KN 12-0-46

Recommended uses:

Industrial and professional use for the formulation of preparations.

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

Restrictions on uses:

Food additive; Reagent in waste water treatment

Manufacturer

SQM North America
2727 Paces Ferry Rd, Building Two, Suite 1425
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 mixture

Classification of the chemical in accordance with 29CFR §1910.1200

Hazard classes and Hazard categories

Toxic to reproduction cat. 1B

Hazard statements

May damage fertility or the unborn child.

Label elements

Hazard pictograms



Signal word

DANGER

Hazard Statements

May damage fertility or the unborn child.

Precautionary Statements

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Wear eye protection.

IF exposed or concerned: 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

Hazard classes and Hazard categories

Boric acid

Toxic to reproduction, Cat. 1B

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product has to be considered as a mixture/preparation

Substance name	CAS No	EC No	Concentration
Boric acid	10043-35-3	233-139-2	< 0.29%

4. FIRST AID MEASURES

Description of first aid measures

General information

IF exposed or concerned: Get medical advice/attention.

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.



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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 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

Contact with combustible materials will not cause spontaneous ignition, however, this product will enhance an existing fire.

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

Thermal decomposition products: Mainly nitrous oxides (NOx), nitrite and potassium oxide.

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

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid generation of dust. Provide adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Keep away from flammable, combustible and reducing substances.



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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: Flammable substance, reducing agents, empty wood pallets.

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

	Boric acid
OSHA	
PEL	Not Established
STEL/ceiling	Not Established
ACGIH (2012 TLVs® and BEIs®)	
TWA	2 mg/m ³ (inhal. fraction)
STEL/ceiling	6 mg/m ³ (inhal. fraction)

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 and protective clothes, 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. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid, prills
Colour	Pink
Odour	Odourless
Odour Threshold	No applicable
pH value	No data available
Melting point / freezing range	~ 385 °C / 725 °F
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	No data available
Vapour density	No data available



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Density (Bulk)	Free Fall	1.26 ton (metric) /m ³	
	Tapped	1.33 ton (metric) /m ³	
Solubility		Soluble in water	
Partition coefficient n-octanol /water		Not applicable	
Auto Ignition temperature (AIT)		Not applicable	
Decomposition temperature		No data available	
Viscosity		Not applicable	
Explosive properties		Not explosive	
Oxidising properties		Non-oxidizer	UN Test O.1: Test for oxidizing solids
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 specific conditions. These incompatible materials shall not include approved packaging materials, pallets, or other dunnage (NFPA 430/2004, Code for the Storage of Liquid and Solid Oxidizers, item 4.4.3.1).

Hazardous decomposition products

Thermal decomposition products: Mainly nitrous oxides (NO_x), nitrite and potassium oxide.

11. TOXICOLOGICAL INFORMATION

The following information mostly refers to the major components of the product and to the impurity (boric acid) which contribute to the classification of the substance.

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 industrial or agricultural 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. Harmful if swallowed. 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

Acute oral toxicity LD50: > 2000 mg/kg bw (additivity formula)

Acute Toxicity Estimate for the mixture LD50: > 5000 mg/kg pc (additivity formula)

Acute dermal toxicity LD50: LC50:

Acute Toxicity Estimate for the mixture Does not contain acutely toxic ingredients/impurities.

Acute inhalation toxicity LC50: Assessment / classification: Based on available data for the ingredients of the mixture, the classification criteria are not met.



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Irritant and corrosive effects

Irritation to the skin	Result	Method
Main ingredients/impurities	non-irritating to skin	Equivalent/similar to OECD guideline 404
Assessment / classification:	Based on available data, the classification criteria are not met	
Irritation to eyes	Result	Method
Main ingredients/impurities	non-irritating to eyes	OECD Guideline 405
Assessment / classification:	Based on available data for the ingredients of the mixture, the classification criteria are not met.	

Respiratory or skin sensitisation

Skin sensitization	Result	Method
Main ingredients/impurities	non-sensitizing.	OECD Guideline 429
Boric acid	not sensitizing.	OECD Guideline 406
Respiratory sensitisation	No information available.	
Assessment / classification:	Based on available data, the classification criteria are not met	

Genetic effects

The product does not contain ingredients classified as germ cell mutagens.

	Bacterial (Ames Test)	Chromosomal aberrations	Mutation in mammalian cells
Main ingredients/impurities	negative	negative	negative
Assessment / classification:	Based on available data, the classification criteria are not met		

Reproductive toxicity

Adverse effects on sexual function and fertility/developmental toxicity

	OECD guideline 422.
Main ingredients	No adverse effects on fertility/development (NOAEL >1500 mg/kg bw).
Boric acid fertility	NOAEL (male rats): 17.5 mg B/kg bw/day (Multigeneration study)
	Boron has been shown to adversely affect male reproduction in laboratory animals, however, male reproductive effects attributable to boron have not been demonstrated in studies of highly exposed workers.
	Benchmark dose (BMDL05): 10.3 mg B/kg bw/day
	Developmental effects have been observed in laboratory animals. The critical effect is considered to be decreased fetal body weight in rats. There is no evidence of developmental effects in humans attributable to boron in studies of populations with high exposures to boron.
Assessment / classification:	Based on available data for ingredients of the mixture, this product is classified and labelled as Presumed human reproductive toxicant, Category 1B , in accordance with Appendix A to 29CFR section 1910.1200.

Specific target organ toxicity (single exposure)

The product does not contain relevant ingredients classified as Target Organ Toxicant.

	Practical experience / human evidence
Main ingredients/impurities	No relevant effect have been observed after single exposure to the main ingredients.
	No reliable study supports the designation of boric acid as a respiratory irritant.
Assessment / classification:	Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure)

The product does not contain relevant ingredients classified as Target Organ Toxicant.

	Organs affected:	Effects	Guideline
Main ingredients	None		
Boric acid	Testes	NOAEL(chronic, rat): 17.5 mg B/kg bw/day	
	A number of studies on boric acid or disodium tetraborate decahydrate in diet or via drinking water for periods of 30 days to two years in rats, mice and dogs are available. Most studies support that boron can cause adverse haematological effects and that the main target organ of boron toxicity is the testis. Boric acid is classified and labelled as Presumed human reproductive toxicant, Category 1B, in accordance with Appendix A to 29CFR section 1910.1200.		
Assessment / classification:	Based on available data for ingredients of the mixture, this product is classified and labelled as Presumed human reproductive toxicant, Category 1B , in accordance		



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with Appendix A to 29CFR section 1910.1200.

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

International Agency for Research on Cancer (IARC)

The product does not contain ingredients classified as carcinogens.

National Toxicology Program (NTP)

The product does not contain ingredients classified as carcinogens.

29 CFR part 1910, subpart Z

The product does not contain ingredients classified as carcinogens.

California Proposition 65

The product does not contain ingredients classified as carcinogens.

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

There is no data for the mixture itself. The following information mostly refers to the major component of the product.

Ecotoxicity

Aquatic Toxicity

Toxicity estimate for the mixture (summation method)

96-h L(E)C50

1336 mg/L

Fish

24-h E(E)C50

489 mg/L

Daphnia magna (fresh water flea).

72-h E(E)C50

> 1100 mg/L

Algae

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

Persistence and degradability

In aqueous solutions, the product will produce nitrate ions. Under anoxic conditions, denitrification occurs and nitrate is ultimately converted into molecular nitrogen as part of the Nitrogen cycle.

Bioaccumulative potential

Low potential for bioaccumulation based on physicochemical properties of main components.

Mobility in soil

The components of this mixture have a low potential for adsorption. Portion not taken up by plants, can leach to groundwater.

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.

Waste containing nitrates that exhibit 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.

Non dangerous good

UN Proper Shipping Name

Not applicable

Hazard class

Not applicable

Packing group

Not applicable

Hazard label(s)

No



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Special marking	Not applicable
Special Provision	No
International Maritime Organization (IMDG Code)	
UN-No.	Non dangerous good
UN Proper Shipping Name	Not applicable
Hazard class	Not applicable
Packing group	Not applicable
Marine pollutant	No
Hazard label(s)	No
Special marking	Not applicable
Special Provision	No
Air transport (ICAO-TI / IATA-DGR)	
UN-No.	Non dangerous good
UN Proper Shipping Name	Not applicable
Hazard class	Not applicable
Packing group	Not applicable
Hazard label(s)	No
Special marking	Not applicable
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	No
Chronic Health Hazard	Yes (Toxic to reproduction)
Fire Hazard	No
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

None ingredient is listed.

DHS - Chemical of Interest (Appendix A to 6CFR Part 27)

It contains potassium nitrate

NFPA 704: National Fire Protection Association

Health	1
Fire	0
Reactivity	0
Special	None

US State Regulations

California Proposition 65

None ingredient is listed.

California Code of Regulations Title 22 (Health & Safety Code), Chapter 33

See <http://www.dtsc.ca.gov/hazardouswaste/perchlorate/>



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Ingredient Disclosure List:

This product may contain boric acid which is listed (1%).

WHMIS Classification:

Reproductive Toxicity, Category 1B.

This product has been classified according to the hazard criteria of the 2015 Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Chemical Inventories

United States TSCA

All ingredients are listed

Canada DSL

All ingredients are listed

México INSQ

All ingredients are listed

European Union (EINECS)

All ingredients are listed

Japan (METI)

All ingredients are listed

16. OTHER INFORMATION

This SDS complies with 29 CFR part 1910 subpart Z (2012) and ANSI Standard Z400.1-2004

Data source

Main ingredients, boric acid REACH Registration Dossiers

Prepared by

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Supersedes

July 2014

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Indication of changes

Version 2 (April 2015) The oxidizing properties and the hazard classification have been changed to non-oxidizer (Sections 2, 5, 9, 14, 15).

Section 1: Recommended and non-recommended uses were updated.

Sections 8 (PPE) and 16 were revised and updated.

Sections 7, 10: Additional information conditions for storage and on Incompatible materials.

Section 15: Additional regulatory information.

Version 1 (July 2014) Section 1: A new Product Identifier was added.
(December 2013) First version