



Safety Data Sheet

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SDS-P/L-C/01

Calcium 2020

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Section 1: Identification of the Hazardous Chemical and of the Supplier

1.1 Product Identifier

Product Name: Liquid Calcium and Magnesium Foliar Fertilizer
Trade Name: Calcium 2020
Active Ingredient: Nitrogen, Calcium, Magnesium and other micro-nutrients
CAS No.(AI): Please refer Section 3
Structural Formula: -
Recommended Usage: Plant nutrition

1.2 Supplier's Information

Address: Agricultural Chemicals (M) Sdn. Bhd.
962, Lorong Perusahaan 8
Taman Perindustrian Perai
13600 Perai , Pulau Pinang
Malaysia
Tel.: +6-04-3907988
Fax: +6-04-3905703
Web: www.agrichem.com.my
Emergency Phone: +6-04-3907988

Section 2: Hazard Identification

Classification: Eye irritation category 2
Hazardous to the Aquatic Environment-Chronic Hazard, category 3

Pictogram:



Signal Word: Warning

Hazard Statement:

H319 Causes serious eye irritation
H412 Harmful to aquatic life with long lasting effects

Precautionary Statement:

P264 Wash exposed body parts thoroughly after handling
P273 Avoid release to the environment
P280 Wear rubber gloves, protective clothing, safety goggles and face protection



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P305+351+338

P310

P501

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

Immediately call a POISON CENTER or doctor/physician

Dispose of containers in accordance to Environmental Quality (Scheduled Waste) Regulations or any local regulations.

Section 3: Composition and Information of the Ingredients of the Hazardous Chemical

Component	CAS No.	Weight, %	Hazard Code
Borax Decahydrate	1303-96-4	< 0.5%	H360, H319
Boric Acid	10043-35-3	< 0.5%	H360FD
Buffer agent	-	< 0.5%	H319
Calcium Chloride	10035-04-8	30 – 40%	H319
Chelating agent	-	< 5%	H302, H318
Copper Sulphate	7758-99-8	< 0.1%	H302, H315, H319
Ferric Nitrate	7782-61-8	< 2%	H315, H319, H335
Solvent	67-56-1	< 1%	H225, H302
Surfactant	-	< 0.5%	H315, H318
Zinc Chloride	7646-85-7	< 0.5%	H302, H314, H318, H335, H373, H400, H410

*This product contains other materials which are not classified as hazardous under CLASS Regulations.

Section 4: First-aid Measures

Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin Contact:	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
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.
Ingestion:	DO NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.
Symptoms:	No data available
Notes to Physician:	No data available

Section 5: Fire-fighting Measures

Suitable Extinguishing Media: Water, carbon dioxide (CO₂), chemical foam, dry chemical



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Specific Hazard During Fire: No data available
Special Protective Equipment: Fire fighters should wear full-faced self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

Personal Precautions: Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Environmental Precautions: Avoid release to the environment.
Method for Cleaning Up: Wear protective clothing as indicated in Section 8. Evacuate non essential personnel. Absorb spills with inert material such as clay, sand, earth, sawdust etc. and collect in a drum. Cover up the contaminated area with household detergent and small amount of water. Brush the slurry and spread inert absorbents on the slurry liquid and collect the absorbed material in a drum. Seal drum and dispose of. Do not contaminate water resources.

Section 7: Handling and Storage

Precautions for Safe Handling: Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Avoid release to the environment.
Conditions for Safe Storage: Store in a well ventilated place. Keep away from heat/sparks/open flames/hot surfaces - No smoking. Keep container tightly closed.
Incompatibles: None known.

Section 8: Exposure Control and Personal Protection

Exposure Limit:

Source	Component	CAS No.	Limit	
Australia	Borax Decahydrate	1303-96-4	TWA-8hr	5mg/m ³
ACGIH	Boric Acid	10043-35-3	TWA inhalable fraction	2mg/m ³
			STEL/ceiling inhalable fraction	6mg/m ³
ACGIH TLV	Buffer agent	-	No data	
	Calcium Chloride	10035-04-8	No data	
Australia	Chelating agent	-	TWA- 8hr	10mg/m ³
NIOSH IDLH	Copper Sulphate	7758-99-8	IDLH	100mg/m ³
			TWA	1mg/m ³
ACGIH TLV			TWA	1mg/m ³
ACGIH TLV OSHA	Ferric Nitrate	7782-61-8	TWA	1mg/m ³
			TWA	1mg/m ³



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Source	Component	CAS No.	Limit	
NIOSH			TWA	1mg/m ³
ACGIH	Solvent	67-56-1	TWA	200ppm
ACGIH			STEL	200ppm
OSHA			PEL (TWA)	260mg/m ³
OSHA			PEL (TWA)	200ppm
	Surfactant	-	No data	
ACGIH TLV	Zinc Chloride-fume	7646-85-7	TWA	1mg/m ³
			STEL	2mg/m ³
US.NIOSH			REL	1mg/m ³
			STEL	2mg/m ³
US.OSHA			PEL	1mg/m ³
			STEL	2mg/m ³
			TWA	1mg/m ³

Engineering Control: Local exhaust ventilation
Individual Protection Measure: Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Personal Protective Equipment:
Eye Protection: Protective goggles
Skin Protection: Rubber gloves and boots
Respiratory Protection: Respirator

Section 9: Physical and Chemical Properties

Appearance: Brownish liquid
Odour: Characteristic odour
Odour Threshold: No data
pH: 4.5
Melting/Freezing Point: No data
Initial Boiling Point: No data
Boiling Range: No data
Flash Point: Not applicable
Evaporation Rate: No data
Flammability: Not applicable
Upper Flammability Limit: Not applicable
Lower Flammability Limit: Not applicable
Vapour Pressure: No data
Vapour Density: No data
Relative Density: 1.42g/ml
Solubility in Water: Soluble
Partition Coefficient P_{o/w}: No data
Auto-ignition Temperature: No data
Decomposition Temperature: No data
Viscosity: No data



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Section 10: Stability and Reactivity

Reactivity:	No data
Chemical Stability:	The material is stable under normal storage condition
Hazardous Reaction:	No data
Condition to Avoid:	Direct sunlight, extreme temperature, open flame, sparks
Incompatible Material:	Strong reducing agent, strong oxidizing agents
Hazardous Decomposition Product:	Carbon oxides, nitrogen oxides, sulfur oxides, phosphorous oxides, zinc oxides, hydrogen chloride

Section 11: Toxicological Information

11.1 Acute Toxicity

Component: Borax Decahydrate		
Ingestion, Oral LD ₅₀ :		
	Rat	4500 – 5000mg/kg
Dermal, LD ₅₀		
	Rabbit	> 10000mg/kg
Component: Boric Acid		
Ingestion, Oral LD ₅₀ :		
	Rat	3765mg/kg
Dermal, LD ₅₀		
	Rabbit	> 2000mg/kg
Inhalation, LC ₅₀		
	Rat	> 2.03mg/L
Component: Citric Acid		
Ingestion, Oral LD ₅₀ :		
	Rat	5400mg/kg
Dermal, LD ₅₀		
	Rat	> 2000mg/kg
Component: Chelating agent		
Ingestion, Oral LD ₅₀ :		
	Rat	1000 - 2000mg/kg
Component: Copper Sulphate		
Ingestion, Oral LD ₅₀ :		
	Rat	481mg/kg
Dermal, LD ₅₀		
	Rat	> 1000mg/kg
Component: Ferric Nitrate		
Ingestion, Oral LD ₅₀ :		
	Rat	3250mg/kg
Component: Solvent		
Ingestion, Oral LD ₅₀ :		



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	Rat	1187 - 2769mg/kg
	Dermal, LD ₅₀	
	Rabbit	15800/kg
	Inhalation, LC ₅₀	
	Rat, 4hr	85mg/L
	Rat, 4hr	64000ppm
Component: Zinc Chloride		
	Ingestion, Oral LD ₅₀ :	
	Rabbit	350mg/kg
	Mouse	1260mg/kg
	Inhalation, LC ₅₀	
	Rat, 10 min	1975mg/m ³

11.2 Chronic Effect from Short and Long Term Exposure

Skin Contact: Not classified as hazardous
 Eye Contact: Causes serious eye irritation
 Inhalation: No data available
 Ingestion: No data available
 Carcinogenicity: No data available
 Mutagenicity: No data available
 Teratogenicity:

Boric Acid

Adverse effect on fertility:

Multigeneration study: NOAEL (fertility, male rats): 17.5mg B/kg bw/day
 Developmental effects have been observed in laboratory animals. The critical effect is considered to be decrease fetal body weight in rats. There is no evidence of developmental effects in human attributable to boron in studies of populations with high exposure to boron
 Boric acid is classified and labeled as "Presumed human reproductive toxicant, category 1B", in accordance with Appendix A to 29CFR section 1910.1200, OSHA-GHS

11.3 Symptoms No data available

Section 12: Ecological Information

Ecotoxicity:

Component: Borax Decahydrate	No data
Component: Boric Acid	
Acute Toxicity	
Fish, LC ₅₀ , 96 hr	74 - 725mg/L
Aquatic invertebrates, EC ₅₀ , 48hr	45 - 1376mg/L
<i>Pseudokirchneriella subcapitata</i> , EC ₅₀ , 72hr	40mg B/L
Chronic Toxicity	
Fish, NOEC/EC ₁₀	2.89 - 16.65mg B/L
Higher plants/Alga/Clorophita, NOEC/EC ₁₀	4 - 50mg B/L
Crustacea/Amphibian, NOEC/EC ₁₀	5.67 - 40.62 mg B/L



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	Aquatic micro-organisms, EC ₅₀ , 3hr	> 175mg B/L	
Component: Buffer agent			
Acute Toxicity			
	Fish (<i>Leuciscus idus melanotus</i>), LC ₅₀ , 48 hr	440mg/L	
	Daphnia magna, static test, 24hr	1535mg/L	
Component: Calcium Chloride			
No data			
Component: Chelating agent			
Acute Toxicity			
	Fish (<i>Leuciscus idus</i>), LC ₅₀ , 96hr	> 500mg/L	
Component: Copper Sulphate			
Acute Toxicity			
	Freshwater fish, LC ₅₀ , 96 hr	0.1mg/L	
	Water flea, EC ₅₀ , 48hr	0.024mg/L	
Component: Ferric Nitrate			
No data			
Component: Solvent			
Acute Toxicity			
	Fish (<i>Lepomis microchirus</i>), LC ₅₀ , 96 hr	15400mg/L	Lethal
	Fish (<i>Onchorynchus mykiss</i>), LC ₅₀ , 96 hr	10800mg/L	
	<i>Daphnia magna</i> , EC ₅₀ , 48 hr	> 10000mg/L	Lethal
	<i>Daphnia magna</i> , EC ₅₀ , 48 hr	24500mg/L	
Threshold Limit			
	<i>Pseudomonas putida</i> , threshold limit, 16hr	6600mg/L	
	Algae (<i>Mycrocystis aeruginosa</i>), 192hr	530mg/L	
	Algae (<i>Scenedesmus quadricauda</i>), 168hr	8000mg/L	
Component: Zinc Chloride			
Acute Toxicity			
	<i>Onchorynchus mykiss</i> , LC ₅₀ , 96hr	0.179-0.393mg/L	Mortality
	<i>Lymnaea stagnalis</i> , EC ₅₀ , 6hr	64mg/L	Intoxication
	<i>Callianassa australienses</i> , EC ₅₀ , 7d	1.61-2.45mg/L	Intoxication
	<i>Callianassa australienses</i> , EC ₅₀ , 10d	1.38-1.71mg/L	Intoxication
	<i>Callianassa australienses</i> , EC ₅₀ , 14d	0.97-1.22mg/L	Intoxication

Persistence and Degradability: No data available
Bioaccumulative Potential: No data available
Mobility in Soil: No data available
Other Adverse Effect: No data available

Section 13: Disposal Information

Dispose of contents/container to Kualiti Alam / authorized body by DOE.



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Section 14: Transportation Information

Land (ADR/RID)	Not regulated
Sea (IMDG)	Not regulated
Air (IATA)	Not regulated

Section 15: Regulatory Information

Classification: Eye irritation category 2
Hazardous to the Aquatic Environment-Chronic Hazard, category 3

Signal Word: Warning
Pictogram:



Pesticides Act: Not applicable
Classification: Not applicable

Section 16: Other Information

Date of Preparation: 16 November 2015
Date of Revision: 17 November 2016
Reference Document: ICOP on Chemicals Classification and Hazard Communication 2014
GHS Purple Book
MSDS:

Material	Source	Date
Borax Decahydrate	Bronson & Jacobs Pty Ltd	15/5/2014
Boric Acid	SQM North America	Oct 2012
Buffer agent	Sigma Aldrich (M) Sdn Bhd	6/1/2015
Calcium Chloride	LabChem Inc	18/3/2014
Chelating agent	Orica Australia Pty Ltd,	21/10/2013
Copper Sulphate	Fisher Scientific	20 May 2014
Ferric Nitrate	Sigma Aldrich (M) Sdn Bhd	14/5/2013
Solvent	Val Tech Diagnostic	15/11/2013
Surfactant	Nippon Nyukazai	8 May 1996
Zinc Chloride	Avantos Performance Material Inc	16/5/2014

Disclaimer: To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.