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VERSION 2.01



Safety Data Sheet

1. PRODUCT AND COMPANY INFORMATION

Product Identifier: Chem Sol 20-20-20

Recommended uses: Fertilizer end-use
Dry fertilizer for mixing with water for foliar and soil applications.

Restrictions on uses: None

Manufacturer: Plant Foods, Inc.
PO Box 1089
Vero Beach, FL 32961

Company Telephone/Fax (772)567-5741 (772)770-0473

Emergency Telephone Number (800)424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

Classification of the mixture

Reproductive toxicity 2
Serious eye damage/irritation 2
Skin corrosion/irritation 2

Hazard statements:

H315 Causes skin irritation
H319 Causes serious eye irritation
H361 Suspected of damaging fertility or the unborn child

Physical Hazards

None

Label elements

Hazard Pictograms



Signal word

Warning

Hazard Statements

May damage fertility. May damage the unborn child.

Precautionary Statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/ eye protection.
P308+P313 If exposed or concerned: Get medical advice/attention.

For Chemical Emergencies Call CHEMTREC - Day or Night - at 800-424-9300.

P405 Store locked up.
 P501 Dispose of contents/container according to local/state/federal regulations.

Other Hazards

None Known

3. Composition/Information on Ingredients

This product is to be considered a mixture/preparation

Substance name		CAS#	Concentration
Potassium nitrate		7757-79-1	5%-50%
Copper EDTA		14025-15-1	.01%-1%
Zinc EDTA		14025-21-9	.1%-1%
Boric Acid		100043-35-3	<2%

**Ingredients not specifically listed are non-hazardous and considered to be confidential business information under 29CFR §1910.1200

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

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.

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

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 the surrounding fire.

Unsuitable material:

None, but attention should be paid to compatibility with chemicals surrounding.

Specific hazards arising from the chemical

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

Thermal decomposition products: (Nox), nitrites, phosphorous oxides, ammonia and metallic 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 and recovery.

Unsuitable material for containment/taking up: None specified

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.

Conditions for safe storage, including any incompatibilities

Keep/store only in original container

Store in well-ventilated place

Keep container tightly closed

Store locked up.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Control Parameters:

Chemical Identity:	CAS#	ACGIH Threshold		OSHA PEL		NIOSH REL	
		TWA	STEL	TWA	STEL	TWA	STEL
Potassium Nitrate	7757-79-1	NDA	NDA	NDA	NDA	NDA	NDA
Boric Acid	10043-35-3	2 mg/m ³	6 mg/m ³	NDA	NDA	NDA	NDA
Urea	57-13-6	NDA	NDA	NDA	NDA	NDA	NDA

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 . Overall
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 the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	solid, granular
Color	blue
Odor	odorless
Odor Threshold	No Data Available
pH value	No Data Available
Melting point/freezing range	No Data Available
Boiling temperature/ range	No Data Available
Flash point	No Data Available
Vapourisation rate	No Data Available
Evaporation rate	No Data Available
Flammable solids	Not flammable
Explosion limits (LEL, UEL)	No Data Available
Vapour pressure	No Data Available
Vapour density	No Data Available
Relative Density	No Data Available
Solubility	>100 g/L at 20° C/68°F (water)
Partition coefficient n-octanol	Not applicable
Auto Ignition temperature	Not applicable
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive properties	Not Explosive
Oxidising properties	Not 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

No Data Available

Conditions to avoid

No Data Available

Incompatible materials

No Data Available

Hazardous decomposition products

Thermal decomposition products: Nitrous oxides (Nox), nitrites, phosphorus oxides, ammonia and metallic 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 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. Ingestion of large amounts may cause gastrointestinal disturbances. May cause delayed lung effects after short term exposure or thermal degradation products.

Information on toxicological effects from short and long term exposure

There is no data available for the mixture itself.

Acute toxicity

Acute oral toxicity	NDA
Acute Estimate for the mixture	>2000 mg/kg bw
Potassium nitrate	>2000 mg/kg bw
Boric Acid	3765 mg/kg bw
Assessment/classification:	Based on available data for the ingredients of the mixture, the classification criteria are not met.

Skin corrosion/irritation:

May cause skin irritation

Serious eye damage/eye irritation:

May cause eye irritation including redness and inflammation.

Respiratory or skin sensitization:

No data available

Carcinogenicity:

No data available

Germ cell mutagenicity

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

Reproductive toxicity

Boric acid 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.

Based on the 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 29CRF section 1910-1200.

Specific target organ toxicity - single or repeated exposure:

No relevant effect have been observed.

Aspiration hazard

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

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

Potassium nitrate

96-h LC50	1378 mg/L	<i>poecilia reticulata</i>
24-h EC50	490 mg/L	<i>Daphnia magna</i>
10d EC50	>1700 mg/L	Several algae species

Boric acid

96-h LC50	74-725 mg B/L	Fish
48-h EC50	45-1376 mg B/L	Aquatic invertebrates
72-h EC50	40 mg B/L	Algae (<i>pseudokirchneriella subcapitata</i>)

Persistence and degradability

The product contains mainly inorganic nitrate and phosphate salts. In aqueous solutions, these salts dissociate into their respective ions. Phosphate ions are finally incorporated into the Phosphorus cycle. 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 absorption. 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 all local, state, and federal regulations. This product is not listed as a dangerous waste in the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste disposal method.

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)	Not applicable
Special Marking	No

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)	Not applicable
Special Marking	No

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

UN-No.	Non dangerous good
UN Proper Shipping Name	Not applicable
Hazard class	Not applicable
Packing group	Not applicable
Hazard label(s)	Not applicable
Special Marking	No
Special provision	No

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

Not applicable

Other special precautions

None

15. REGULATORY INFORMATION

US Federal - OSHA Status:

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.

NFPA 704-2012: National Fire Protection Association

Health	1
Fire	0
Reactivity	0
Special	None



US State Regulations

California Proposition 65
California Code of Regulations Title 22
(Health & Safety Code), Chapter 33

None ingredient is listed
see <http://www.dtsc.ca.gov/hazardouswaste/perchlorate/>

Chemical Inventories

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

16. OTHER INFORMATION

Prepared by: Plant Foods, Inc.

Preparation Date: 30-Jun-15

Key Legend Information

N/Ap:	Not Applicable	ND:	Not Determined
N/R	Not Rated	NDA:	No Data Available
ACGI	American Conference of Govr'ntal Industrial Hygienist	TLV:	Threshold Limit Value
OSHA	Occupational Safety and Health Admin.	TWA:	Time Weighted Average
PEL:	Permissible Exposure Limit	NTP:	National Toxicology Program
STEL:	Short Term Exposure Limit	TSCA:	Toxic Substance Control Act
IARC:	International Agency for Research on Cancer	CERCLA:	Compresive Respones, Compensation and Liability Act
SARA Title III:	Superfund Amendments and Reauthorization Act	CWA:	Clean Water Act
CAA:	Clean Air Act	IMO:	International Maritime Organization Shipping Info
RCRA:	Resource Conservation Recovery Act		
IATA:	International Air Transportation Association Shipping Information		

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OSHA STANDARD 29 CRF 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a Hazard Communication Program including training, Safety Data Sheets, and access to written records. We request that you, and it is your legal duty, make all information in this Safety Data Sheet available to your employees.