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VERSION 1.01

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Safety Data Sheet

1. PRODUCT AND COMPANY INFORMATION

Product Identifier:	Chem Sol 20-10-20 Greenhouse Premium
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

Oxidizing solid, Cat 3
Eye irritant, Cat 2
Toxic to reproduction, Cat 2
Skin irritation, Cat 2

Hazard statements:

H272 May intensify fire; oxidizer
H319 Causes serious eye irritation
H361 Suspected of damaging fertility or the unborn child
H315 Causes skin irritation

Physical Hazards

None

Label elements

Hazard Pictograms



Signal word

Warning

Precautionary Statements:

P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P210 Keep away from heat.

P220	Keep/Store away from clothing/ combustible materials.
P221	Take any precaution to avoid mixing with combustibles.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P281	Use personal protective equipment as required
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 +P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	If exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Other Hazards

None

3. Composition/Information on Ingredients

This product is to be considered a mixture/preparation

Substance name	CAS#	Concentration
Potassium nitrate	7757-79-1	40-50%
Ammonium Nitrate	6484-52-2	30-40%
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 most important known symptoms and effects are described in section 2. Further symptoms are possible

Indication of any immediate medical attention and special treatment needed

No additional information available

5. FIRE FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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.

- Keep away from heat and sources of ignition
- 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
Ammonium Nitrate	6484-52-2	NDA	NDA	NDA	NDA	NDA	NDA
Zinc EDTA	14025-21-9	NDA	NDA	NDA	NDA	NDA	NDA
Copper EDTA	100043-35-3	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
Vapourisatio rate	No Data Available
Evaporation rate	No Data Available
Flammable solids	Not flammable
eExplosion 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	No Data Available
Auto Ignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	No Data Available
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

No Data Available

Conditions to avoid

Keep away from flammable, combustible and reducing substances.

Incompatible materials

Flammable, combustible and reducing substances under specific conditions.

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 ter exposure

There is no data available for the mixture itself.

Acute toxicity

Acute oral toxicity	NDA
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Acute Estimate for the mixture	>2000 mg/kg bw
Potassium nitrate	>2000 mg/kg bw
Ammonium nitrate	2950 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 2, 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
Ammonium nitrate		
48-h LC50	447 mg/L	Fish (<i>Cyprinus carpio</i>)
24-h EC50	490 mg/L	<i>Daphnia magna</i>
10d EC50	> 1700mg/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.	1477
UN Proper Shipping Name	NITRATES, INORGANIC, N.O.S.
Hazard class	5.1
Packing group	III
Hazard label(s)	5.1 (oxidizer)
Special Marking	No
Special provision	IB8;Ip3:T1;TP33

International Maritime Organization (IMDG Code)

UN-No.	1477
UN Proper Shipping Name	NITRATES, INORGANIC, N.O.S.
Hazard class	5.1
Packing group	III
Marine pollutant	No
Hazard label(s)	5.1 (oxidizer)
Special Marking	No
Special provision	223

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

UN-No.	1477
UN Proper Shipping Name	NITRATES, INORGANIC, N.O.S.
Hazard class	5.1
Packing group	III
Hazard label(s)	5.1 (oxidizer)
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	Yes (eye irritation)
Chronic Health Hazard	Yes (Toxic to reproduction)
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

None ingredient is listed.

NFPA 704-2012: National Fire Protection Association

Health	1
Fire	0
Reactivity	0
Special	OX

**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/>

State Right to Know Laws

None

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:	Permissable 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 CFR 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.