

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name: 12-28-8 Plant Starter Soluble Fertilizer Plus Minors  
Recommended uses: Fertilizer end-use, preparation of fertilizers mixtures.  
Dry fertilizer for mixing with water for foliar and soil applications.  
Restrictions on uses: None  
Manufacturer: Southern Agricultural Insecticides, Inc.  
P.O. box 218  
Palmetto, FL 34220  
Company Telephone/Fax (941-722-3285/(941)-723-2974  
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**

Oxidizing Solid

**Hazard statements**

May intensify fire; oxidizer.

**Label elements****Hazard pictograms****Signal word**

Warning  
May intensify fire; oxidizer.

**Hazard Statements****Precautionary Statements**

Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection. If exposed or concerned: Get medical advice/attention.

Store locked up.

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

**Other hazards**

None

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

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,
Potassium nitrate	7757-79-1	231-818-8	>18%
Sodium Borate	12280-03-4	234-541-0	0.10%

**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 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 vapours.

Thermal decomposition products: Nitrous oxides (NO<sub>x</sub>), nitrites, phosphorus 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 or 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 a well-ventilated place. Keep container tightly closed. Store locked up.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Exposure Guidelines**

#### **Occupational exposure limits**

	Potassium nitrate	Sodium Borate
OSHA PEL (total dust)	Not Established	15 mg/m <sup>3</sup>
PEL (respirable dust)	Not Established	5 mg/m <sup>3</sup>
STEL/ceiling	Not Established	Not Established
ACGIH (2012 TLVs® and BEIs®)		
TWA	Not Established	2 mg/m <sup>3</sup> (inhal. fraction)
STEL/ceiling	Not Established	6 mg/m <sup>3</sup> (Inhal. fraction)

Derived No-Effect level (DNEL) suggested by the manufacturer  
Workers (industrial/professional):

Potassium nitrate

DNEL Human, dermal, long term (repeated): 120.8 mg/kg/day (systemic)

DNEL Human, inhalation, long term (repeated): 136.7 mg/m<sup>3</sup> (systemic)

Sodium Borate Not available

DNEL Human, dermal, long term (repeated): Not available

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. 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 this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Solid, granular or crystalline powder
Colour	pale blue
Odour	Odourless
Odour Threshold	No applicable
pH value	No data available
Melting point / freezing range	No data available
Boiling temperature / boiling range	No data available
Flash point	No data available
Vapourisation rate / Evaporation rate	No data available
Flammable solids	Not flammable
Explosion limits (LEL, UEL)	No applicable
Vapour pressure	No data available
Vapour density	No data available
Relative Density	No data available
Solubility	Soluble
Partition coefficient n-octanol/water	Not applicable
Auto Ignition temperature (A IT)	Not applicable
Decomposition temperature	No data available
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidizing 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

None identified

### Conditions to avoid

None identified

Incompatible materials

None identified Hazardous decomposition products

Thermal decomposition products: Nitrous oxides (NO<sub>x</sub>), 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 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:	
Acute Toxicity Estimate for the mixture	> 2000 mg/kg bw	(additivity formula)
Potassium nitrate	>2000 mg/kg bw	
Ammonium nitrate	2950 mg/kg bw	
Sodium Borate	Not available	
Assessment / classification:	Based on available data for the ingredients of the mixture, the classification criteria are not met.	

#### Irritant and corrosive effects

Irritation to the skin	Result	Method
Potassium nitrate	non-irritant.	Equivalent/similar to OECD guideline 404
Sodium Borate	non-irritant.	Equivalent/similar to OECD guideline 404
Assessment / classification:	Based on available data, the classification criteria are not met.	

#### Respiratory or skin sensitisation

Skin sensitization	Result	Method
Potassium nitrate	not sensitizing.	OECD Guideline 429
Sodium Borate	not sensitizing.	OECD Guideline 429
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 cell:
Sodium Borate	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.
Potassium nitrate	No adverse effects on fertility/development (NOAEL >1500 mg/kg bw).
Sodium Borate	NOAEL (male rats): 17.5 mg B/kg bw/day (Multigeneration study)
fertility	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.
developmental toxicity	Benchmark dose (BMDLOS): 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 soluble boron in studies of populations with high exposures to soluble boron.

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

#### Specific target organ toxicity (single exposure)

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

	Practical experience / human evidence
Potassium nitrate	No relevant effect have been observed after single exposure to potassium nitrate.
Sodium Borate	No relevant effect have been observed after single exposure to the substance. 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)

	Organs affected:	Effects	Guideline
Potassium nitrate	None	No effects (NOAEL >1500 mg/kg bw)	OECD 422
Boric acid	Testes	NOAEL (chronic, rat): 17.5 mg B/kg bw/day	

A number of studies on boric acid or disodium tetra borate 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 hematological effects and that the main target organ of boron toxicity is the testis.

Assessment / classification: Based on available data for ingredients of the mixture, this product is classified and labelled as Presumed human reproductive toxicant, Category 18, in accordance with Appendix A to 29CFR section 1910.1200. However, within the current knowledge of the supplier and in the concentrations applicable this product is not classified as hazardous to health

**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)	No component of this product present at levels $\geq 0.1$ is identified as probable, possible or confirmed human carcinogen by IARC.
National Toxicology Program (NTP)	No component of this product present at levels $\geq 0.1$ is identified as Known or anticipated carcinogen by NTP.
29 CFR part 1910, subpart Z	No component of this product present at levels $\geq 0.1$ is identified as carcinogen or potential carcinogen by OSHA.
California Proposition 65	No component of this product present at levels $\geq 0.1$ is identified as carcinogen by California Prop.65.
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

None

## 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	Poeci/ia reticulata (freshwater fish)
	24-h EC50	490 mg/L	Daphnia magna (fresh water flea).
	10 d EC50	> 1700 mg/L	Several algae species
Sodium borate	EC/LD50	80 mg B/L to 627 mg B/L	fish
(Range of end Values)		80 mg B/L 10 104 mg B/L	Amphibian

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

### 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 adsorption. Portion not taken up by plants, can leach to ground-water.

### 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. Product should, if possible, be used for an appropriate application.

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.  
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)	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	Not applicable
Special marking	No

#### Special handling procedure

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

No ingredient is listed.

NFPA 704/2012: National Fire Protection Association

Health	1
Fire	0
Reactivity	0
Special	None

##### US State Regulations

California Proposition 65 No ingredient is listed.

##### 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**

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

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

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