

MnBooster 0-7-0 + 4% S + 7% Mn

1. Identification

Product identifier:	MnBooster 0-7-0 + 4% S + 7% Mn
Product code:	
Supplier Name:	Agro-100 Ltée 990 Chemin des Prairies Joliette, Québec Canada, J6E 0L4
Telephone:	(450) 759-8887
Emergency tel. number:	(450) 759-8887
Available hours:	8h00 - 16h00 Monday to Friday
Recommended use:	Liquid nutrient solution for foliar application
Restriction on use:	Respect application recommandations and suggested rates

2. Hazard identification

Signal word:

DANGER

Product classification:



Skin corrosion - Category 1. Serious eye damage - Category 1. Health hazards not otherwise classified - Category 1 Corrosive. Corrosive to metals - Category 1.

Specific target organ toxicity - repeated exposure - Category 1. Reproductive toxicity - Category 2.

Hazard statement(s):

- H314 Causes severe skin burns and eye damage.
 - H374 Causes serious injury to the respiratory tract.
 - H290 May be corrosive to metals.
 - H361 Suspected of damaging fertility or the unborn child.
 - H372 Causes damage to organs (brain) through prolonged or repeated exposure.

Precautionary statement(s)

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original packaging. Do not breathe mist, vapors and spray. Wear protective gloves, protective clothing, eye and face protection. Wash hands thoroughly after handling and any other part of the body that may have been exposed to the product.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice. Get medical advice if you feel unwell. Wash contaminated clothing before reuse. Absorb spillage to prevent material-damage.

Storage: Store in a corrosive resistant container with a resistant inner liner. Store locked up.



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Disposal: Dispose of contents/container in accordance with local, regional, national and/or international regulations in force.

Other hazards: No other effects shown.

See toxicological information, section 11

3. Composition/ Information on ingredients

No	CAS No :	Common name and synonyms	Concentration % (w/w)
1	10034-96-5	Manganese(II) sulfate hydrate	10.00 - 30.00
2	7664-38-2	Phosphoric acid	11.30

The actual concentration range is withheld as a trade secret.

4. First-aid measures

If swallowed, irritation, any type of overexposure or symptoms of overexposure occur during use of the product or persists after use, immediately contact a POISON CENTER, an EMERGENCY ROOM or a PHYSICIAN; ensure that the product safety data sheet is available.

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention as soon as possible.

Skin contact: Remove contaminated clothing immediately. Wash the skin with soap and water. Thoroughly wet contaminated clothing. If irritation persists, consult a doctor.

Inhalation: Move exposed person to fresh air. Keep this person warm and lying down. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Symptoms: This product is irritating and corrosive to skin, eyes, respiratory and digestive tracts. The severity of symptoms can vary depending on the exposure conditions (contact time, product concentration, etc.). Eyes burn sensation which is manifested by tearing, and/or conjunctivitis. Decreased concentration and memory, sleep disturbances, irritability and muscular aches.

Effects (acute or delayed): Inhalation of high concentrations vapors can cause severe burns to the mouth and airways leading to the lungs. If on skin, this product causes severe burns. Contact with eyes may cause redness, tearing, edema, pain, corneal opacity and even blindness. Studies suggest the possibility of an increase in congenital malformations. Several studies in workers show that prolonged exposure to high concentrations (usually> 5 mg / m³) of manganese in the air, or its inorganic compounds, causes manganism. Manganese is a neurological syndrome associated with the accumulation of manganese in the brain. Its development is progressive and disabling. Following repeated exposure paresthesia, speech disorder (monotone, stuttering) and gait (loss of balance, difficulty walking backwards), slight tremor, difficulty in writing, decreased manual dexterity, frozen facies, emotional instability, memory and judgment disorders, slow and clumsy movements, uncontrolled laughter and crying.

Immediate medical attention and special treatment: Probable mucosal damage may contraindicate the use of gastric lavage. Warning: risk of gastric perforation.



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5. Fire-fighting measures

Suitable extinguishing media: Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media: Jets of water can facilitate the spread of fire.

Specific hazards arising from the hazardous product: Releases dangerous fumes.

Hazardous combustion products: Sulfur oxides. Phosphorus oxide. Oxides of manganese.

Special protective equipment and precautions for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions: No action shall be taken involving any personal risk or if you do not have suitable training or protection. Evacuate surrounding areas. Do not touch or walk through spilled material. Shut off all heating and ignition sources. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Protective equipment and emergency procedures: Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution. Use inert absorbent or retention tubes in the event of a large spill.

Methods and materials for containment and cleaning up: Stop leak if without risk. Move containers from spill area. Contain leaks and pick up with non-combustible absorbent materials such as sand, earth or vermiculite. Then, place in an appropriate waste disposal container according to local regulations. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Precautions for safe handling: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

The handling of this product must comply with local regulations. Store in an airtight container located in a dry, well ventilated and soil corrosion resistant cemented. Refer to the storage of the ROHS standards and NFC. Keep away from combustible materials and bases. If the product is stored with other dangerous substances, refer to the NFC segregation table. Containers for corrosive substances shall be kept closed, carry clear identification of their contents and be handled with care. Note: this product attacks certain types of plastic, rubber or coating.

Conditions for safe storage: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Store in a closed container, if possible within a overpackaging that is impeable to the corrosive vapours.

Incompatibility: Oxidizing agents. Bases. Peroxides.



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8. Exposure Controls/ Personal protection

Alberta

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		r occupational are limit (TWA) to compare the second secon		Ceiling ccupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	N/A	N/A	N/A	N/A	N/A	N/A
2	7664-38-2	Phosphoric acid	N/A	1	N/A	3	N/A	N/A
	-					-		

British-Columbia

No	CAS No :	Common name and synonyms			•				15-minute occupational exposure limit (STEL)		Ceiling ccupational exposure limit	
			ppm	mg/m³	ppm	mg/m ³	ppm	mg/m ³				
1	10034-96-5	Manganese(II) sulfate hydrate	N/A	N/A	N/A	N/A	N/A	N/A				
2	7664-38-2	Phosphoric acid	N/A	1	N/A	3	N/A	N/A				

Ontario

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute o exposure li	•	Ceiling co exposu	•
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	N/A	N/A	N/A	N/A	N/A	N/A
2	7664-38-2	Phosphoric acid	N/A	N/A	N/A	N/A	N/A	N/A
	-							

Quebec

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		occupational 15-minute occupational re limit (TWA) exposure limit (STEL)		Ceiling ccupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	N/A	N/A	N/A	N/A	N/A	N/A
2	7664-38-2	Phosphoric acid	N/A	1	N/A	3	N/A	N/A
	-	1						



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Saskatchewan

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		B-hour occupational xposure limit (TWA) exposure limit (STEL)		Ceiling ccupational exposure limit	
			ppm	mg/m³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	N/A	N/A	N/A	N/A	N/A	N/A
2	7664-38-2	Phosphoric acid	N/A	1	N/A	3	N/A	N/A
	•	•			-			

United States

No	CAS No :	Common name and synonyms	IDLH	R	egulatory	Limits	Recommended Limits	
			NIOSH	OSH	OSHA PEL Ca		NIOSH REL	ACGIH ® 2019 TLV ®
				ppm	mg/m ³	8-hour TWA (ST) STEL (C) Ceiling	Up to 10-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling
1	10034-96-5	Manganese(II) sulfate hydrate	500	N/A	N/A	N/A	N/A	N/A
2	7664-38-2	Phosphoric acid	4008	N/A	1	1 mg/m3 (ST) 3 mg/m3	1 mg/m3 (ST) 3 mg/m3	1 mg/m3 (ST) 3 mg/m3

IDHL: Immediately Dangerous to Life or Health Concentrations NIOSH: National Institute for Occupational Safety and Health OSHA: Occupational Safety and Health Administration PEL: Permissible Exposure Limits California / OSHA: California Division of Occupational Safety and Health REL: Recommended Exposure Limits ACGIH ®: American Conference of Governmental Industrial Hygienists TLV ®: Threshold Limit Values

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

Individual protection measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eyes: DO NOT WEAR CONTACT LENSES Wear anti-splash safety goggles.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties.

Respiratory: If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Others: Wear protective clothing with long sleeves and appropriate safety shoes at all times.



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9. Physical and chemical properties

Physical state: Liquid Colour: Dark pink Odour: Acrid Odour threshold: Not available **pH:** 1 Melting/Freezing point: > 0 °C (32 °F) Initial boiling point/boiling range: > 100 °C (212 °F) Flash point: Not applicable Flammability (Solid, Gas): Not applicable Lower flammable/explosive limit: Not applicable Upper flammable/explosive limit: Not applicable Auto-ignition temperature: Not applicable Evaporation rate: > 0,05 (Butyl acetate = 1) Vapour pressure: Not available Vapour density: > 1 (air = 1) Specific gravity: 1,243 kg/L at 20 °C (water = 1) Solubility in water: Not applicable Partition coefficient - n-octanol/water (Log Kow): Not applicable Decomposition temperature: Not available Kinematic viscosity: Not available

10. Stability and reactivity

Reactivity: Stable under recommended conditions of storage and handling.

Chemical stability: The product is chemically stable under normal conditions of use.

Possibility of hazardous reactions: May react violently upon contact many organic and inorganic compounds.

Conditions to avoid: Keep away from incompatible products (see section 7).

Incompatible materials: This product attacks metals and can attack certain types of plastic, rubber or coatings.

Hazardous decomposition products: Sulfur oxides. Phosphorus oxide. Oxides of manganese.



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11. Toxicological information

Oral	Dermal	Inhalation gases	Inhalation vapours	Inhalation dusts/mists
5222.76 mg/kg	24247.79 mg/kg	N/A	> 20 mg/l	> 5 mg/l

No	CAS No :	Common name and synonyms	LD ₅₀ oral mg/kg	LD ₅₀ skin mg/kg	LC₅₀ inhalation ppmV 4h - gases	LC ₅₀ inhalation mg/l 4h - vapours	LC ₅₀ inhalation mg/l 4h - dusts-mist
1	10034-96-5	Manganese(II) sulfate hydrate	2150	> 5000	N/A	N/A	> 5.00
2	7664-38-2	Phosphoric acid	1250	2740	N/A	N/A	> 5.00

Routes of exposure: This product is absorbed by the digestive and respiratory tract. This product is not absorbed by the skin, it exerts a local action that destroys tissue.

Symptoms: This product is irritating and corrosive to skin, eyes, respiratory and digestive tracts. The severity of symptoms can vary depending on the exposure conditions (contact time, product concentration, etc.). Eyes burn sensation which is manifested by tearing, and/or conjunctivitis. Decreased concentration and memory, sleep disturbances, irritability and muscular aches.

Delayed and immediate effects: Inhalation of high concentrations vapors can cause severe burns to the mouth and airways leading to the lungs. If on skin, this product causes severe burns. Contact with eyes may cause redness, tearing, edema, pain, corneal opacity and even blindness. Studies suggest the possibility of an increase in congenital malformations. Several studies in workers show that prolonged exposure to high concentrations (usually> 5 mg / m³) of manganese in the air, or its inorganic compounds, causes manganism. Manganese is a neurological syndrome associated with the accumulation of manganese in the brain. Its development is progressive and disabling. Following repeated exposure paresthesia, speech disorder (monotone, stuttering) and gait (loss of balance, difficulty walking backwards), slight tremor, difficulty in writing, decreased manual dexterity, frozen facies, emotional instability, memory and judgment disorders, slow and clumsy movements, uncontrolled laughter and crying.

Aspiration hazard	N/A
Skin corrosion - Skin irritation	Yes
Serious eye damage - Serious eye irritation	Yes
Skin sensitization	N/A
Respiratory sensitization	N/A
Specific target organ toxicity – single exposure	N/A
Specific target organ toxicity – single exposure Category 3 Narcotic effects	N/A
Specific target organ toxicity – single exposure Category 3 Respiratory tract irritation	N/A
Specific target organ toxicity – repeated exposure	Yes

No	CAS No :	Common name and synonyms	IARC	ACGIH	Mutagenicity	Effect on reproduction
1	10034-96-5	Manganese(II) sulfate hydrate	N/A	A4	No effects shown.	No effects shown.
2	7664-38-2	Phosphoric acid	N/A	N/A	No effects shown.	No effects shown.
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Cancer classification under IARC (International Agency for Research on Cancer)

Group 1: carcinogenic to humans.
Group 2A: probably carcinogenic to humans.
Group 2B: possibly carcinogenic to humans.
Group 3: not classifiable as to its carcinogenicity to humans.
Group 4: probably not carcinogenic to humans.

Cancer classification under ACGIH (American Conference of Governmental Industrial Hygienists)

Group A1: confirmed human carcinogen.

Group A2: suspected human carcinogen.

Group A3: confirmed animal carcinogen with unknown relevance to humans.

Group A4: not classifiable as a human carcinogen.

Group A5: not suspected as a human carcinogen.

12. Ecological information

Ecotoxicity

	CAS No :	Common name and synonyms	%	Aquatic Ecotoxicity short term	Aquatic Ecotoxicity long term	Terrestrial Ecotoxicity
1	10034-96-5	Manganese(II) sulfate hydrate	10.00 - 30.00	Not available.	Toxic to aquatic life with long lasting effects.	No known adverse effect to the environment.
2	7664-38-2	Phosphoric acid	11.30	No known adverse effect to aquatic life.	No known adverse effect to aquatic life.	No known adverse effect to the environment.

Persistence and degradability. Bioaccumulative potential. Other adverse effects

No	CAS No :	Common name and synonyms	%	Persistent	Bio- accumulation	Aquatic ecotoxicity
1	10034-96-5	Manganese(II) sulfate hydrate	10.00 - 30.00	N.D.	N.D.	N.D.
2	7664-38-2	Phosphoric acid	11.30	Yes	No	No
	•				•	

Degradability: N/A

Mobility in soil: N/A



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13. Disposal considerations

Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

14. Transport information

	TDG	DOT	IMDG	ΙΑΤΑ
UN Number	1805	1805	1805	1805
Proper shipping name	PHOSPHORIC ACID SOLUTION	PHOSPHORIC ACID SOLUTION	PHOSPHORIC ACID SOLUTION	PHOSPHORIC ACID SOLUTION
Transport hazard class(es)	8	8	8	8
Packing group	III	III	III	III

United States - Reportable Quantities (RQ)

No	CAS No :	Common name and synonyms	RQ lbs (kg)
1	7664-38-2	Phosphoric acid	5000 (2270)

Transport in bulk (according to Annex II of the International Convention for the Prevention of Pollution From Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), and the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code)): N/A

Marine pollutant: No

Exemption for limited quantity: 5 L

In accordance with the Canadian Transport of Dangerous Goods regulations by Road, we use the 1.17 exemption when applicable. In accordance with49 CFR article 172.315 for transportation by a mode other than air, we use the Limited quantities exemption when applicable.

Other exemptions: No other exemption.

Special precautions: Not applicable



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15. Regulatory information

Canada

No	CAS No :	Common name and synonyms	%	DSL	NDSL	NPRI
1	10034-96-5	Manganese(II) sulfate hydrate	10.00 - 30.00	Х		
2	7664-38-2	Phosphoric acid	11.30	Х		
	-					

United States

No	CAS No :	Common name and synonyms	%	TSCA	PROP-65	RTK
1	10034-96-5	Manganese(II) sulfate hydrate	10.00 - 30.00	х		
2	7664-38-2	Phosphoric acid	11.30	Х		
	-					

The customer is responsible for determining the PPE (personal protection equipment) code for this material.

The classification of the product and the SDS were developped in accordance with HPR and HazCom 2012.

16. Other information

Date: 2021-12-03

Version: 1

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