

1. Identification

Product identifier:	Agro-Mn Oligo Prime 8-0-0 6% Mn
Product code:	---
Recommended use:	Liquid fertilizer
Restriction on use:	Respect application recommendations and suggested rates
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

2. Hazard identification

Signal word: DANGER

Product classification:



Specific target organ toxicity – repeated exposure - Category 1.

Hazard statement(s): H372 - Causes damage to organs (brain) through prolonged or repeated exposure.

Precautionary statement(s)

Prevention: Do not breathe mist, vapors and spray. Wash hands thoroughly after handling and any other part of the body that may have been exposed to the product. Do not eat, drink or smoke when using this product.

Response: Get medical advice if you feel unwell.

Storage: Not applicable

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	18.80

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: If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do not induce vomiting unless instructed by medical personnel.

Symptoms: Decreased concentration and memory, sleep disturbances, irritability and muscular aches.

Effects (acute or delayed): 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. Manganism 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: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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: No specific hazard.

Hazardous combustion products: Carbon monoxide and dioxide. Hydrocyanic acid. Acetone.

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.

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.

Incompatibility: Strong oxidizing agents. Chlorinated products. Nitrates and nitrites.

8. Exposure Controls/ Personal protection

Control parameters:

Occupational exposure limit values:

Alberta

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

British-Columbia

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Ontario

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Quebec

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Saskatchewan

No	CAS No :	Common name and synonyms	8-hour occupational exposure limit (TWA)		15-minute occupational exposure limit (STEL)		Ceiling occupational exposure limit	
			ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1	10034-96-5	Manganese(II) sulfate hydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

United States

No	CAS No :	Common name and synonyms	IDLH NIOSH	Regulatory Limits			Recommended Limits	
				OSHA PEL		California / OSHA PEL	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	Not listed	Not listed	Not listed	Not listed	Not listed

IDLH: 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.

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.

9. Physical and chemical properties

Physical state: Liquid

Colour: Black

Odour: Odorless

Melting/Freezing point: 0 °C (32 °F)

Initial boiling point/boiling range: 100 °C (212 °F)

Flammability: Not applicable

Lower flammable/explosive limit: Not applicable

Upper flammable/explosive limit: Not applicable

Flash point: Not applicable

Auto-ignition temperature: Not applicable

Decomposition temperature: > 135 °C (275 °F)

pH: 9,7

Kinematic viscosity: > 20,5 mm²/s (at 40 °C)

Solubility (in water): Miscible

Partition coefficient – n-octanol/water (Log Kow): < 1

Vapour pressure: 17,535 mm Hg at 20 °C

Density and relative density: 1,291 kg/L at 20 °C (water = 1)

Relative vapour density: < 1 (air = 1)

Particle characteristics: Not applicable

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. This product is unstable under the following conditions: The product decomposes when exposed to heat.

Possibility of hazardous reactions: No dangerous or polymerization reactions will not occur under normal conditions of use. Emits toxic fumes when heated.

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

Incompatible materials: None known at room temperature.

Hazardous decomposition products: Carbon monoxide and dioxide. Sulfur oxides. Nitrogen oxides. Oxides of manganese. Cyanuric acid. Ammonia.

11. Toxicological information

	Oral	Dermal	Inhalation gases	Inhalation vapours	Inhalation dusts/mists
ATE _{product}	8744.75 mg/kg	56555.56 mg/kg	N/A	611.11 mg/l	> 5 mg/l

No	CAS No :	Common name and synonyms	LD ₅₀ oral mg/kg	LD ₅₀ skin mg/kg	LC ₅₀ 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

Routes of exposure: This product is absorbed by the digestive tract.

Symptoms: Decreased concentration and memory, sleep disturbances, irritability and muscular aches.

Delayed and immediate effects: 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	N/A
Serious eye damage - Serious eye irritation - Eye irritation	N/A
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	Not listed	A4	No effects shown.	No effects shown.

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

No	CAS No :	Common name and synonyms	%	Aquatic Ecotoxicity short term	Aquatic Ecotoxicity long term	Terrestrial Ecotoxicity
1	10034-96-5	Manganese(II) sulfate hydrate	18.80	Not available.	Toxic to aquatic life with long lasting effects.	Harmful 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	18.80	N/A	N/A	N/A

Degradability: N/A

Mobility in soil: N/A

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	IATA
UN Number				
Proper shipping name	Not regulated	Not regulated	Not regulated	Not regulated
Transport hazard class(es)				
Packing group				

Canada - ERAP

Not applicable

United States - Reportable Quantities (RQ)

Not applicable

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: Not applicable

Other exemptions: Not applicable

Special precautions: Not applicable

15. Regulatory information

Canada

No	CAS No :	Common name and synonyms	%	DSL	NDSL	NPRI
1	10034-96-5	Manganese(II) sulfate hydrate	18.80	X		

United States

No	CAS No :	Common name and synonyms	%	TSCA	PROP-65	RTK
1	10034-96-5	Manganese(II) sulfate hydrate	18.80	X		

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

16. Other information

Date: 2023-12-08

Version: 1

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