

Magnesium Sulphate, Technical Grade

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Magnesium Sulphate, Technical Grade**

Product Code(s) : Epsom Salt

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: hygroscopic, white solid.
Odour - Odourless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not applicable.

Hazard statement(s)

Not applicable.

Precautionary statement(s)

Not applicable.

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Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

Product dust may be irritating to eyes, skin and respiratory system.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Harmful to aquatic life. Avoid release to the environment.

See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Magnesium Sulphate Heptahydrate	Magnesium Sulfate	10034-99-8	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical advice/attention if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Product dust may be irritating to eyes, skin and respiratory system.
- Direct contact with eyes may cause temporary irritation. Symptoms may include tearing, redness and discomfort.
- Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.
- Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- Chronic skin contact with low concentrations may cause dermatitis.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

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Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. When substances is heated above 700°C (1290°F), it releases oxygen, which will increase the burning rate of combustible materials. This product is not an oxidizer in its current state. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Sulfur oxides; Magnesium oxides; Oxygen.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Keep containers closed when not in use. Empty containers retain residue and can be dangerous.

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- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep containers tightly closed when not in use. Material is hygroscopic and may absorb moisture from air. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
- Incompatible materials** : Strong acids; Oxidizing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Magnesium Sulphate Heptahydrate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

- : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

Other protective equipment

- : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : hygroscopic, white solid
- Odour** : Odourless.
- Odour threshold** : N/Av
- pH** : 7.9 (10% Solution)(anhydrous)
- Melting/Freezing point** : Decomposes.
- Initial boiling point and boiling range** : Decomposes.
- Flash point** : N/Av
- Flashpoint (Method)** : N/Av

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Evaporation rate (BuAe = 1) : N/Ap
Flammability (solid, gas) : Not considered flammable.
Lower flammable limit (% by vol.) : N/Ap
Upper flammable limit (% by vol.) : N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : N/Ap
Vapour density : N/Ap
Relative density / Specific gravity : 1.73 @68°F (20°C)
Solubility in water : Soluble (340 g/l@68°F (20°C))
Other solubility(ies) : Insoluble in organic solvents.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : N/Ap
Auto-ignition temperature : N/Ap
Decomposition temperature : 302-662°F (150-350°C) (approximately)
Viscosity : N/Ap
Volatiles (% by weight) : N/Ap
Volatile organic Compounds (VOC's) : N/Ap
Absolute pressure of container : N/Ap
Flame projection length : N/Ap
Other physical/chemical comments : Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions. Material is hygroscopic and may absorb moisture from air.
Possibility of hazardous reactions : Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Moisture. High humidity. Extreme heat.
Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials : Strong acids, Oxidizing agents.
Hazardous decomposition products : Sulfur oxides; Magnesium oxides; Oxygen.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES

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Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Potential Chronic Health Effects

: Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Magnesium Sulphate Heptahydrate	N/Av	≥2000 mg/kg (anhydrous) (No mortality)	>2000 mg/kg (Read-across) (No mortality)

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Harmful to aquatic life. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

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Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Magnesium Sulphate Heptahydrate	10034-99-8	>96.4 mg/L (anhydrous) Rainbow trout	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Magnesium Sulphate Heptahydrate	10034-99-8	>88.7 mg/L (anhydrous) Daphnia magna (Water flea)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Magnesium Sulphate Heptahydrate	10034-99-8	>99.2 mg/L/72hr (anhydrous) Green algae	N/Av	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Magnesium Sulphate Heptahydrate (CAS 10034-99-8)	N/Av	N/Av

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Do not contaminate ponds, waterways or ditches with chemical or used container. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

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SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Magnesium Sulphate Heptahydrate	10034-99-8	NL	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Magnesium Sulphate Heptahydrate	10034-99-8	No	N/Ap	No	No	No	No	No	No

Canadian Information:

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Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECS</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
Magnesium Sulphate Heptahydrate	10034-99-8	Not listed	Present	Present	(1)-467	Not listed	Present	May be used as a single component chemical under an appropriate group standard

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- EC50: Effective Concentration 50%.
- EINECS: European Inventory of Existing Commercial chemical Substances
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency
- IECSC: Inventory of Existing Chemical Substances
- Inh: Inhalation
- IOC: Inventory of Chemicals
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- NOEC: No observable effect concentration
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PA: Pennsylvania
- PEL: Permissible exposure limit
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- RCRA: Resource Conservation and Recovery Act
- RI: Rhode Island
- SARA: Superfund Amendments and Reauthorization Act
- SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
- STEL: Short Term Exposure Limit
- TDG: Canadian Transportation of Dangerous Goods Act & Regulations

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TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
- 2. Canadian Centre for Occupational Health and Safety, CCHInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
- 3. IARC Monographs. Overall Evaluation of Carcinogenicity
- 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
- 5. US EPA Title III List of Lists: March2015 Version
- 6. California Proposition 65 List: April 22, 2016 Version
- 7. European Chemicals Agency, Classification Legislation, 2015
- 8. Material Safety Data Sheet from manufacturer.

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Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p>Prepared for: Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p>Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

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