

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Magnesium and Potassium Sulphate
 Trade name : Dynamate
 Other names : Sulphate of potash magnesia, langbeinite

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For use in animal feed applications.
 Restrictions on use : Not intended for human consumption.

1.3 Details of the supplier of the safety data sheet

Distributed by : Pestell Minerals & Ingredients
 141 Hamilton Rd
 New Hamburg, ON
 CANADA N3A 2H1

Telephone : +1 519 662-2877
 Email : qa@pestell.com

1.4 Emergency telephone number

Emergency Phone # : +1 613 996-6666 CANUTEC (Can) +1-703-527-3887 (CHEMTREC) (US)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Label elements not required.

Precautionary Statements

Use good industrial hygiene when handling this product.
 Wash hands carefully with soap and water.
 Store apart from incompatible materials (see Section 10 for more information).
 Dispose of waste in accordance with local authorities.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixture

Substances	Formula	CAS-No.	Concentration
Potassium Magnesium sulphate (Langbeinite)	K ₂ SO ₄ · 2MgSO ₄	7447-40-7	94.5-99.5%
Sodium Chloride	NaCl	7647-14-5	0.5 -2.0%
Other naturally-occurring minerals	-	Various	0.5-3.5%

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Direct contact with eyes may give temporary irritation.

May aggravate preexisting respiratory conditions and high blood pressure.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

Not applicable.

5.2 Special hazards arising from the substance or mixture

When subjected to high temperatures, combustion could release oxides of sulphur.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Prevent contaminated water from entering drains and sewers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains, sewers or water courses. Large spills can be hazardous for the environment.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Product is hygroscopic Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Guidelines:	OSHA Permissible Exposure Limits (PEL):	Particulates Not Otherwise Regulated: 5 mg/m ³ TWA (respirable); 15 mg/m ³ TWA (total)
	ACGIH Threshold Limit Value (TLV):	No data available.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains, sewers or water courses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values in this section are determined at 20°C (68°F) and 760 mm Hg (1 atm).

9.1 Information on basic physical and chemical properties

- | | |
|--------------------|--|
| a) Appearance | Form: crystalline or granular
Colour: White to pink to grey |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | ~7 in a 5% solution |

e) Melting point/freezing point	972 °C (1,700 °F)
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	No data available
l) Vapour density	No data available
m) Specific gravity	2.81 - 2.85
n) Water solubility	~24.4% at 25°C (77 °F)
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available
u) Bulk density	Loose - 83 to 94 lbs/ft ³ (1300 - 1505 kg/m ³)

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

NaCl may react with noble metals, such as iron or steel, as well as bromine or trifluoride.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Electrolysis of mixtures containing NaCl and nitrogen compounds may form explosive nitrogen trichloride. A potentially explosive reaction may occur if NaCl is mixed with dichloromaleic anhydride and urea.

10.4 Conditions to avoid

Exposure to moisture, incompatible materials.

10.5 Incompatible materials

Strong acids, Strong oxidizing agents. Avoid contact with hot nitric acid, may cause evolution of toxic nitrosyl chloride. Contact with other strong acids may produce irritating hydrogen chloride gas.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Sulphur oxides.
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity- Potassium magnesium sulphate

Oral : No data available
Inhalation: No data available
Dermal: No data available

Acute toxicity- Sodium chloride

LD50 (rat, oral) > 3000mg/kg
LD50(mouse oral) >4000mg/kg
Inhalation: LC50(rat) >42g/m³/ 1 hour
Dermal: No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Eyes - Rabbit
Result: slight irritation

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	No data available
Toxicity to daphnia and other aquatic invertebrates	No data available
Toxicity to algae	No data available
Toxicity to bacteria	No data available

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

TDG (Canada)

Not dangerous goods

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

FDA: Potassium Chloride used as a nutrient and/or dietary supplement in food for human consumption. FDA Food Substances Generally Recognized as Safe 21 CFR 184.1 (2010).

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pestell Minerals & Ingredients and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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