



## MATERIAL SAFETY DATA SHEET

### SECTION 1:

#### IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product name	POLY4 – a multi-nutrient granular or crystalline mineral
Manufacturer	Sirius Minerals LTD Resolution House, Lake View, Scarborough YO11 3ZB, UK Phone: +44 1723 470 010 Company registered number: 04948435
Email address of person responsible	commercial@siriusminerals.com
Applications	POLY4 is a multi-nutrient fertilizer resource suitable for use where potassium, sulphur, magnesium or calcium are required. Suitable for organic production as a source of essentially chloride-free potassium, sulphur, magnesium and calcium.

Material safety data sheet

Effective: March 2020

Location: USA, Canada

### SECTION 2:

#### HAZARD IDENTIFICATION

Hazard identification	Not classified as hazardous. Information is offered critical to the safe handling and proper use of the product.
Signal word	No signal word.
Hazard statements	No known significant effects or hazard.
Pictograms	None.
Precautionary statements	Not classified as hazardous. None.
Other unclassified hazards	Handling of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

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### SECTION 3:

#### COMPOSITION/ INGREDIENT INFORMATION

Mineral	Polyhalite: $K_2SO_4 \cdot MgSO_4 \cdot 2CaSO_4 \cdot 2H_2O$	85% w/w
	Magnesite: $MgCO_3$	2.6% w/w
	Anhydrite: $CaSO_4$	8.0% w/w
	Halite: $NaCl$	3.6% w/w
	Starch: $(C_6H_{10}O_5)$	0.8 % w/W
CAS	Polyhalite: Dipotassium dicalcium magnesium tetrasulfate dihydrate	15278-29-2
	Magnesite: Magnesium carbonate	546-93-0
	Anhydrite: Calcium sulfate	7778-18-9
	Halite: Sodium chloride	14762-51-7
	Starch: 2R,3S,4S,5R,6R)-2-(hydroxymethyl)-6-[(2R,3S,4R,5R,6S)-4,5,6-trihydroxy-2-(hydroxymethyl)oxan-3-yl] oxy-oxane-3,4,5-triol	9005-25-8

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**SECTION 4:  
FIRST AID MEASURES**

Eyes	May cause irritation due to mechanical action. Irrigate eyes with plenty of water for 15 minutes. Seek medical attention if discomfort persists.
Skin	Following prolonged exposure adverse symptoms may include dryness and skin cracking. Treat symptomatically. Rinse exposed skin and decontaminate clothing following exposure.
Inhalation	No specific data. Following exposure move the patient to fresh air. Seek medical attention if discomfort persists.
Ingestion	Rinse the mouth and drink plenty of water. Seek medical attention if symptoms persist. DO NOT GIVE AN UNCONSCIOUS PERSON ANYTHING TO DRINK.

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**SECTION 5:  
FIRE FIGHTING MEASURES**

Flammability	Not applicable. Use an extinguishing media suitable for the fire source.
Specific hazard	No specific fire hazard.
Protective equipment	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA). Contain and collect the effluent water used to fight the fire and prevent environmental contamination.

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**SECTION 6:  
ACCIDENTAL RELEASE MEASURES**

Personal Precautions	Wear dust mask if dust is airborne. Use gloves with protracted exposure.
Environmental precautions	Avoid environmental contamination to waterways via drains and sewers. Inform the relevant authorities if spillage is likely to cause an environmental hazard (sewers, waterways, soil or air). Sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**SECTION 7:  
HANDLING AND STORAGE**

Storage	Store in a dry area. Absorbs moisture on long-term storage under high humidity conditions. If product has caked, or has adhered to the storage or transport container, stay out of the potential engulfment zone in case the material collapses. Store in accordance with local regulations. Ensure that bulk bags or smaller packaged products stored in tiers are stacked to prevent sliding, rolling, or collapse.
Personal protective measures	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 canteen areas. Use appropriate personal protective equipment (see Section 8). Do not ingest, avoid prolonged contact with eyes, skin and clothing.

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**SECTION 8:  
EXPOSURE CONTROL/PERSONAL PROTECTION**

Engineering controls	Local exhaust ventilation when excessive dust is produced to comply with worker exposure limits.
Personal Protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary. Cotton or cotton/synthetic overalls or coveralls and gloves are normally suitable. Footwear appropriate to the task. Fully functional and serviced respirators may be worn in accordance with site risk assessment. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 requirements is in place.
Occupational Exposure Limits	CA Alberta Provincial (Canada). Alberta TWA: 10 mg/m <sup>3</sup> Inhalable, 3 mg/m <sup>3</sup> Respirable, for Particles Not Otherwise Regulated.: 10 mg/m <sup>3</sup> 8 hours.  CA Quebec Provincial. Quebec TWAEV: for Particles Not Otherwise Regulated: 10 mg/m <sup>3</sup> 8 hours as Total Dust.  OSHA PEL (United States). TWA: 15 mg/m <sup>3</sup> , (Particulates not otherwise regulated (PNOR) Total particulates) 8 hours.

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**SECTION 9:  
PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	Grey, grey white or white solid product.
Flammability	Not flammable.
Odour	Odourless
Vapor Density	Not determined.
pH	Neural
Relative Density	Poured 1.3 Kg/m <sup>3</sup> Tapped 1.4 Kg/m <sup>3</sup>
Melting Point	Undetermined.
Solubility	Soluble fertilizer suitable for soil application at all commercial application rates.
Boiling point	Undetermined.
Flash Point and dangers	Not applicable. Not a explosion hazard. Does not contain oxidizing agents.
Evaporation rate	Not Applicable.
Flammability	Non-flammable
Partition Coefficient	Not applicable
Auto Ignition temperature	Not self igniting.
Particle size	+/- 200 μ (powder)
	2-4mm (granular)

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**SECTION 10:  
STABILITY AND REACTIVITY**

Reactivity	Stable and non-reactive. No decomposition if used according to specifications.
Chemical Stability	Stable and non-reactive. No decomposition if used according to specifications.
Other	No dangerous reactions known. Do not overheat. No incompatible materials known. Hazardous decomposition products may include; sulphur oxides, magnesium oxide.

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**SECTION 11:  
TOXICOLOGICAL INFORMATION**

On eyes	Short-term discomfort.
On skin	Prolonged contact may cause dermatitis.
By inhalation	Discomfort to the nasal passage.
By ingestion	Large amounts may cause gastro-intestinal irritation purging, weakness and circulatory problems.
LD/LC50 values relevant for classification	None.
Carcinogenetic, mutagenic and reproductive toxicity	Not classified, a non-genotoxic product.

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**SECTION 12:  
ECOLOGICAL INFORMATION**

Toxicity	No further relevant information available for aquatic toxicity.
Persistence and degradability	A naturally occurring mineral, therefore no biodegradation tests are applicable.
Bioaccumulation	Does not accumulate in organisms.
Mobility in soil	No relevant information.
Classification	Non-hazardous for the environment.

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**SECTION 13:  
DISPOSAL CONSIDERATIONS**

Technique	Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible in accordance with local regulation. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
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**SECTION 14:  
TRANSPORT INFORMATION**

Transport Classification	Not classified as hazardous for transport.
Un Shipping name	None.
UN number	None.
Packaging group	None.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Packaging group	Not applicable.
Environmental hazards	None.

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**SECTION 15:  
REGULATORY AND OTHER INFORMATION**

Regulatory	Not applicable.
CERCLA	Not listed.
RCRA 261.33	Not listed.
SARA TITLE III: (Exemptions at 40 CFR, Part370 agricultural use, or if less than 10,000 pounds on-site.)	Not applicable.
NTP, IARC, OSHA:	Not been identified as a carcinogen.
Canada DSL and NDSL	
TSCA:	Polyhalite is a naturally occurring minerals processed only by mechanical means.
CA Proposition 65: (Health & Safety Code Section 25249.5	No hazard warning.
WHMIS	WHMIS 2015 SDS prepared according to the hazard criteria of the Hazardous Products Regulations.

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**SECTION 16:  
OTHER INFORMATION**

	CAS: Chemical Abstracts Service (division of the American Chemical Society) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent IBC: International Bulk Chemical Code MARPOL73/78: The International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
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