



BLACK EARTH
A WESTMET GROUP COMPANY

PRODUCT GUIDE

ESSENTIAL HUMIC SOLUTIONS

GROUNDING IN THE WAY YOU FARM

At Black Earth, humics are not an experiment. They are proven in the field, trusted by retailers, and built to fit the way you already farm. Driven by our exclusive, high-quality Canadian Humalite reserve, we deliver humic solutions that strengthen soil, boost nutrient efficiency, and support long-term farm resilience.

From our vertically integrated operation in Alberta, Canada, we manage every step from mine to market to ensure unmatched quality, consistency, and performance. Our products work seamlessly within existing programs, providing measurable value without changing the practices that got you here.

THE POWER OF CANADIAN HUMALITE

Black Earth controls one of the largest and purest deposits of Humalite, a uniquely rich humic substance found only in select regions of Canada. With millions of tonnes available, our Humalite is:

- Naturally low in heavy metals
- Certified organic
- Highly active and bioavailable

This exclusive Humalite sets Black Earth apart by delivering reliable agronomic performance, consistent quality, and proven sustainability that modern farms can count on season after season.

INNOVATION FOR THE FUTURE OF FARMING

At Black Earth, innovation is rooted in the field. Our research and development focus on next-generation crop nutrients, regenerative agriculture, and advanced soil health technologies. By combining science with real on-farm performance, we continue to raise the standard for humic excellence.

Our work extends beyond the farm. We are pioneering new ways to utilize Humalite in soil restoration, environmental remediation, and industrial applications. As the global demand for sustainable solutions grows, Black Earth remains a trusted leader, building the future of humic technology from the ground up.



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THE POWER OF HUMICS: YOUR SOIL SOLUTION

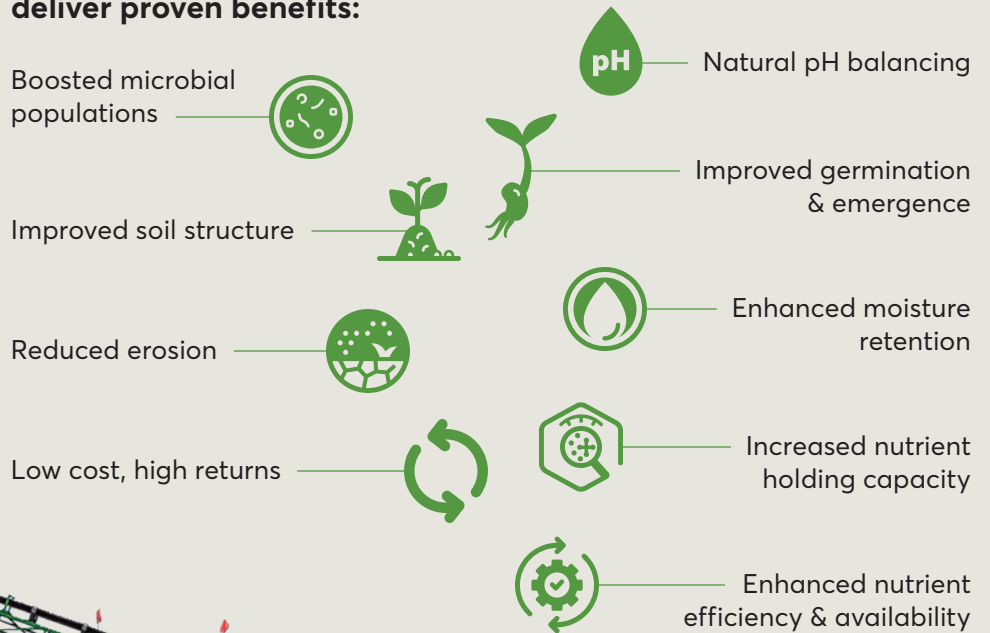
Today's farming challenges demand innovative solutions. From declining soil health to unpredictable weather patterns, growers face increasing pressure to maintain yields while farming sustainably. This is where humic substances make the difference.

THE PROBLEM

- Soil degradation (salinity, compaction, erosion, pH imbalance)
- Declining organic matter
- Nutrient inefficiency (leaching, poor availability)
- Low microbial activity
- Poor water retention
- Weather-related stress
- Stagnant yields

THE SOLUTION: HUMIC TECHNOLOGY

Black Earth's humic products deliver proven benefits:



THE QUALITY BEHIND OUR HUMALITE

At Black Earth, we mine Humalite directly from one of the highest-quality deposits in the world, ensuring purity, consistency and superior humic content. Unlike other sources, which often contain higher ash content and impurities, our Alberta-based Humalite is extracted and processed under our control, guaranteeing low ash content, high carbon concentration and exceptional cation exchange capacity (CEC) – all critical factors in determining humic effectiveness.

WHY SOURCE MATTERS

Low Ash, High Purity

Compared to other humified organic sources, our Humalite contains significantly less ash, ensuring more bioavailable humic substances for superior soil and plant benefits.

Rich in Active Compounds

Black Earth Humalite has been found to contain higher levels of aromatic and phenolic components, key contributors to nutrient chelation and soil health.

High Cation Exchange Capacity (CEC)

With greater CEC values than many alternative sources, our Humalite improves nutrient retention and availability, making fertilizers more effective.

Naturally Derived, No Chemical Modification

Our Humalite is extracted without harsh processing or additives, preserving its natural structure and effectiveness.

SCIENTIFIC VALIDATION

Laboratory testing confirms that Black Earth Humalite:

Has one of the lowest ash contents (11%), compared to 36–85% in other sources.

Source: Schulten, H.R., & Schnitzer, M. (1997). *Source characterization of humified organic matter.*

Can contain upwards of 80% humic acid content, significantly higher than many North American alternatives.

Source: Schulten, H.R., & Schnitzer, M. (1997). *Source characterization of humified organic matter.*

Exhibits superior total acidity (7.0 mmol/g), enhancing its chelation and nutrient-binding properties.

Source: Schnitzer, M., Diné, H., Paré, T., Schulten, H.R., & Ozdoba, D. (2001). *Some chemical and spectroscopic characteristics of six organic ores.* In E. A. Ghabbour & G. Davies (Eds.), *Humic substances: Structures, models and functions.* Royal Society of Chemistry.



Our commitment to rigorous testing, superior sourcing and industry-leading standards ensures that Black Earth Humalite delivers real, measurable benefits for soil, crops and long-term agricultural sustainability.

GRANULAR PRODUCTS

BLACK EARTH
humaLITE AG4

THE CORNERSTONE OF SOIL HEALTH

A premium coarse-grade humic granule designed for maximum soil builder and nutrient efficiency.



CONTENT ANALYSIS

Humic Substances	ISO 60% Colorimetric 90%
Organic Carbon	40%
pH	3-4
Moisture	28-32%
C:N Ratio	40:1
Bulk Density	46 lb./ft ³ (740 kg/m ³)

BLENDING INSTRUCTIONS

- DO NOT blend with urea, nitrogen-based products, DAP
- Compatible with most potassium and phosphate products, with little to NO nitrogen in the products (MAP or MEZ)
- Not soluble in water
- **Conduct small jar test, prior to blending**
- Apply directly to the soil or mix with a substrate
- Read label in its entirety

PRODUCT SHELF LIFE & STORAGE

- 3 years if stored in dry conditions
- Avoid high humidity, water and direct sunlight
- Bulk bags can be stored outdoors if dry
- Small bags must be stored indoors

APPLICATIONS



Agriculture



Turf



Horticulture



Aquaculture

APPLICATION RATES

Agriculture	Broadcast	100-250 lb./ac. (45-336 kg/ha)
	Strip-Till	60-200 lb./ac. (70-225 kg/ha)
	In-Furrow	40-60 lb./ac. (45-70 kg/ha)
Turf	Greens, Tees & Fairways	6-10 lb./1000 ft ² (3-5 kg/1000 ft ²)
	Hydroseeding Broadcast	200-500 lb./ac. (225-560 kg/ha)
Horticulture	Soil Mix/Substrate	2-5%

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 55 lb. (25 kg)

*Bulk available upon request

PARTICLE SIZE

- 2-5 mm

EQUIPMENT COMPATIBILITY

- Broadcast spreaders
- Strip-till equipment
- In-furrow applicators
- Fertilizer blending equipment

CERTIFICATIONS





SUPERIOR EFFICIENCY THROUGH FINER GRADE

A premium fine-grade humic granule engineered for rapid soil integration and enhanced nutrient availability.



CONTENT ANALYSIS

Humic Substances	ISO 60% Colorimetric 90%
Organic Carbon	40%
pH	3-4
Moisture	28-32%
C:N Ratio	40:1
Bulk Density	48 lb./ft ³ (767 kg/m ³)

BLENDING INSTRUCTIONS

- DO NOT blend with urea, nitrogen-based products, DAP
- Compatible with most potassium and phosphate products, with little to NO nitrogen in the products (MAP or MEZ)
- Incompatible with urea
- Not soluble in water
- **Conduct small jar test, prior to blending**
- Apply directly to the soil or mix with a substrate

PRODUCT SHELF LIFE & STORAGE

- 3 years if stored in dry conditions
- Avoid high humidity, water and direct sunlight
- Bulk bags can be stored outdoors if dry
- Small bags must be stored indoors

APPLICATIONS



Agriculture



Turf

APPLICATION RATES

Agriculture	Broadcast	100-250 lb./ac. (60-335 kg/ha)
	Strip-Till	60-200 lb./ac. (70-225 kg/ha)
	In-Furrow	40-60 lb./ac. (45-70 kg/ha)
Turf	Greens, Tees & Fairways	6-10 lb./1000 ft ² (3-5 kg/1000 ft ²)
	Hydroseeding Broadcast	200-500 lb./ac. (225-560 kg/ha)

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 55 lb. (25 kg)

*Bulk available upon request

PARTICLE SIZE

- 1-2 mm

EQUIPMENT COMPATIBILITY

- Broadcast spreaders
- Strip-till equipment
- In-furrow applicators
- Fertilizer blending equipment

CERTIFICATIONS



BLACK EARTH
humaLITE MP30

HIGH-PURITY HUMIC MINI-GRANULAR

A fine-grade humic mini-granular with a fine/powdered particle size, designed for seamless blending into dry fertilizers, liquid formulations and soil amendments to enhance soil health and nutrient efficiency.



CONTENT ANALYSIS

Humic Substances	ISO 55% Colorimetric 90%
Organic Carbon	40%
pH	3-4
Moisture	28-32%
C:N Ratio	40:1
Cation Exchange Capacity (CEC)	185 meq/100g
Bulk Density	48 lb./ft ³ (774 kg/m ³)

BLENDING INSTRUCTIONS

- DO NOT blend with urea, nitrogen-based products, DAP
- Compatible with most potassium and phosphate products, with little to NO nitrogen in the products (MAP or MEZ)
- Incompatible with urea
- Not soluble in water
- **Conduct small jar test, prior to blending**
- Apply directly to the soil or mix with a substrate

PRODUCT SHELF LIFE & STORAGE

- 3 years if stored in dry conditions
- Avoid high humidity, water and direct sunlight
- Bulk bags can be stored outdoors if dry
- Small bags must be stored indoors

APPLICATIONS



Agriculture



Drilling



Manufacturing

APPLICATION RATES

For application rates in manufacturing, drilling, aquaculture and agriculture, contact your Black Earth Sales Representative.

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 55 lb. (25 kg)

*Bulk available upon request

EQUIPMENT COMPATIBILITY

- Dry fertilizer blenders
- Liquid extraction systems

PARTICLE SIZE

- Powder < 1 mm

CERTIFICATIONS



ADVANCED HUMIC GRANULE FOR AGRICULTURAL EXCELLENCE

A coarse-granular humic product with partial solubility, engineered to enhance soil conditioning, nutrient efficiency and plant performance in row crops, horticulture and turf applications, ensuring both immediate and long-term benefits.



CONTENT ANALYSIS

Humic Substances	ISO 50% Colorimetric 80%
Organic Carbon	43%
pH	9–10
Moisture	13%
C:N Ratio	42:1
Solubility	60%
Bulk Density	40 lb./ft ³ (640 kg/m ³)

BLENDING INSTRUCTIONS

- Compatible with many dry fertilizers
- Less than 8% mix of diammonium phosphate (DAP) (18-46-0) recommended
- When blended with urea, ideal mix ratio is 8% Magna AG to urea
- **Conduct a jar test before blending with nitrogen-based products**
- Always conduct a small-scale blending test before full-scale application

PRODUCT SHELF LIFE & STORAGE

- Shelf life: 3 years if stored in dry conditions
- Storage: Keep away from high humidity, water exposure and direct sunlight
- Bulk bags can be stored outdoors if kept dry
- Smaller bags must be stored indoors
- Do not allow Magna to freeze. Store in a temperature-controlled environment to prevent freezing or product separation. Maintain consistent handling conditions similar to biological inoculants for best performance.

APPLICATIONS



Agriculture



Turf



Horticulture

APPLICATION RATES

All Crops	Broadcast	50–90 lb./ac. (22–84 kg/ha)
	In-Furrow	10–20 lb./ac. (6–22 kg/ha)
Turf	Broadcast	10–20 lb./ac.
Horticulture	Soil Mix	2–5%
Fertilizer Blending	Pre-Mix	5–20%

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 50 lb. (22.7 kg)

PARTICLE SIZE

- 2–5 mm

EQUIPMENT COMPATIBILITY

- Spreaders
- Fertilizer blenders
- Strip-till equipment
- Precision application systems



DOUBLE THE POWER, DOUBLE THE RESULTS

A 70% AG4 and 30% Magna blend, HumiZEN Dual Action combines coarse-grade humic granules with partially soluble humate to enhance nutrient availability, soil structure and long-term soil health.



CONTENT ANALYSIS

Humic Substances	ISO 50% Colorimetric 80%
Organic Carbon	31%
pH	4–6
Moisture	23%
C:N Ratio	40:1
Solubility	25%
Bulk Density	44 lb./ft ³ (707 kg/m ³)

BLENDING INSTRUCTIONS

- DO NOT blend with urea (DAP) or any other concentrated nitrogen-based products
- Compatible with potassium and phosphate products with little to no nitrogen (MAP or MEZ)
- **Conduct small jar test prior to blending if you are mixing with any kind of nitrogen product**
- Apply as a stand-alone product or blended with compatible dry fertilizers
- Suitable applications include broadcast, strip-till and in-furrow

PRODUCT SHELF LIFE & STORAGE

- 3 years if stored in dry conditions
- Avoid high humidity, water and direct sunlight
- Products must be stored indoors

APPLICATIONS



Agriculture



Turf



Horticulture

APPLICATION RATES

Agriculture	Broadcast	75–125 lb./ac. (110–165 kg/ha)
	Strip-Till	35–45 lb./ac. (40–50 kg/ha)
	In-Furrow	25–35 lb./ac. (55–85 kg/ha)
Turf	Greens, Tees & Fairways	5–8 lb./1000 ft ² (2.5–4 kg/1000 ft ²)
	Horticulture	Mix 2–5% to total soil mix or 1% when applied with seed

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 55 lb. (25 kg)

PARTICLE SIZE

- 2–5 mm

EQUIPMENT COMPATIBILITY

- Broadcast spreaders
- Strip-till equipment
- In-furrow applicators
- Blending systems

LIQUID PRODUCTS





ENHANCED BIOACTIVITY FOR SUPERIOR RESULTS

A highly concentrated liquid humate, expertly formulated to maximize nutrient efficiency and crop performance in every pass – whether applied in-furrow, foliar, fertigation or tank-mixed with other inputs, delivering seamless integration and powerful soil enhancement.



CONTENT ANALYSIS

Humic Substances	3.5% (Colorimetric) ISO 2.0% CDFA 2.0%
Organic Carbon	1.01%
pH	5–6
C:N Ratio	50:1
Fulvic Acid	3.5% (ISO 19822)
Cation Exchange Capacity (CEC)	235 meq/100g
Density	8.43 lb./gal. (1.01 kg/L)

BLENDING INSTRUCTIONS

- Agitate prior to use
- Compatible with most liquid fertilizers and other agricultural inputs
- **Conduct a small jar test on acid formulations with a pH below 5.0**

LIQUID PRODUCT SHELF LIFE & STORAGE

- 1 year if stored in cool conditions
- Avoid direct sunlight
- Do not allow liquid product to freeze or be exposed to excessive heat
- Store between 10–45°C (50–105°F)

APPLICATIONS



Agriculture



Turf



Horticulture

APPLICATION RATES

All Crops – Seeding	In-Furrow	8–16 oz./ac. (1 L/ac.) (580 mL–1.2 L/ha)
	All Irrigated Crops	Irrigation Injection
All Crops	Foliar	.13–.27 gal./ac. (0.5–1 L/ac.) (1.5–2.5 L/ha)

SIZES AVAILABLE

- 256 gal. (1000 L)
- 132 gal. (500 L)
- 30 gal. (114 L)
- 5 gal. (18.9 L)

*Bulk available upon request

EQUIPMENT COMPATIBILITY

- Irrigation systems
- Spraying equipment
- In-furrow applicators
- Liquid fertilizer equipment

CERTIFICATIONS





HIGH-PERFORMANCE LIQUID FULVIC ACID

HumiZEN Keal is an organic liquid fulvic acid that enhances nutrient absorption, mobility and efficiency in agriculture, horticulture, turf and aquaculture. As a foliar treatment, it improves spray coverage, accelerates uptake and boosts plant resilience, supporting stronger growth and optimized performance.



CONTENT ANALYSIS

Humic Substances	ISO 0.3% CDFA 0.3%
Organic Carbon	0.60%
pH	9–11
C:N Ratio	50:1
Fulvic Acid	3.45% (ISO 19822)
Cation Exchange Capacity (CEC)	325 meq/100g
Density	8.43 lb./gal. (1.01 kg/L)

BLENDING INSTRUCTIONS

- Shake or agitate prior to use
- Conduct small-scale trial prior to blending with any fertilizer formula and other agricultural inputs
- Read label in its entirety

LIQUID PRODUCT SHELF LIFE & STORAGE

- 1 year if stored in cool conditions
- Avoid direct sunlight
- Do not allow liquid product to freeze or be exposed to excessive heat
- Store between 10–45°C (50–105°F)

APPLICATIONS



Agriculture



Turf



Horticulture



Aquaculture

APPLICATION RATES

All Crops	Foliar	0.25–0.5 L/ac.
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SIZES AVAILABLE

- 256 gal. (1000 L)
- 132 gal. (500 L)
- 30 gal. (114 L)
- 5 gal. (18.9 L)

EQUIPMENT COMPATIBILITY

- Fertigation systems
- Foliar sprayers
- Irrigation injection systems

CERTIFICATIONS



BLACK EARTH
humaPLUS Liquid Carbon

READY-TO-USE LIQUID INNOVATION

A versatile liquid humic acid formulation designed for maximum flexibility in application and superior results.



CONTENT ANALYSIS

Humic Substances	12% (Colorimetric)
Organic Carbon	4.49%
pH	9-11
C:N Ratio	50:1
Cation Exchange Capacity (CEC)	300 meq/100g
Density	8.76 lb./gal. (1.05 kg/L)

BLENDING INSTRUCTIONS

- Do not mix with high nitrogen or phosphate liquid fertilizer solutions, such as 10-34-0
- When impregnating with urea, can blend up to ½ gal. (1.9 L) per tonne for nitrogen stabilization purposes
- If mixing with UAN, mix at a rate of .125 gal. LC/10 gal. (1 L LC/37.9 L) UAN (28-0-0 or 32-0-0)
- **Conduct small jar test, prior to blending**

APPLICATIONS



Agriculture



Environment



Turf



Horticulture



Aquaculture

APPLICATION RATES

Irrigation Water	1 gal./ac. (3.8 L/ac.) (10 L/ha)
Foliar Spray	0.25-0.5 gal./ac. (1-2 L/ac.) (2.5-5 L/ha)
Pre-Plant In-Furrow	0.25-0.5 gal./ac. (1-2 L/ac.) (2.5-5 L/ha)
Side Dress and Strip-Till	0.5-2 gal./ac. (2-8 L/ac.) (5-20 L/ha)

SIZES AVAILABLE

- 256 gal. (1000 L)
- 132 gal. (500 L)
- 30 gal. (114 L)

*Bulk available upon request

CERTIFICATIONS



EQUIPMENT COMPATIBILITY

- Irrigation systems
- Sprayers
- Liquid fertilizer equipment
- In-furrow applicators

BLACK EARTH
humaPLUS Liquid
 Carbon HC

HIGH-CONCENTRATION LIQUID HUMIC SOLUTION

A highly concentrated liquid humic acid designed for starter fertilizers, top dressings, irrigation injection and foliar applications, enhancing nutrient efficiency, soil structure and plant resilience.



CONTENT ANALYSIS

Humic Substances	24% (Colorimetric)
Organic Carbon	7.70%
pH	10–12
C:N Ratio	50:1
Cation Exchange Capacity (CEC)	288 meq/100g
Density	9.26 lb./gal. (1.11 kg/L)

BLENDING INSTRUCTIONS

- Do not mix with acid fertilizers such as 10-34-0 or high nitrogen/phosphate concentrates
- Compatible with UAN solutions (28-0-0, 32-0-0) at a rate of 1.32 gal. LC/10 gal. (0.5 L LC/37.9 L) UAN
- Can be impregnated with urea at a rate of up to 1 gal. (3.79 L) per tonne for nitrogen stabilization
- Shake or agitate prior to use
- Dilute 1:1 in water to match the standard Liquid Carbon concentration
- **Conduct small jar test, prior to blending**

PRODUCT SHELF LIFE & STORAGE

- Shelf life: 1 year if stored in cool conditions.
- Storage: Avoid direct sunlight, freezing and excessive heat exposure. Store between 10–45°C (50–105°F)

APPLICATIONS



Agriculture



Turf



Horticulture

APPLICATION RATES

Irrigation Injection	1 gal./ac. (3.8 L/ac.) (10 L/ha)
Foliar Spray	0.25–0.5 gal./ac. (1–2 L/ac.) (2.5–5 L/ha)
Pre-Plant In-Furrow	0.25–0.5 gal./ac. (1–2 L/ac.) (2.5–5 L/ha)
Side Dress and Strip-Till	0.5–2 gal./ac. (2–8 L/ac.) (5–20 L/ha)

SIZES AVAILABLE

- 256 gal. (1000 L)
- 132 gal. (500 L)
- 30 gal. (114 L)
- 5 gal. (18.9 L)

*Bulk available upon request

CERTIFICATIONS



EQUIPMENT COMPATIBILITY

- Fertigation systems
- Foliar sprayers
- Irrigation injection systems

POWDER PRODUCTS



BLACK EARTH
humaLITE XP100

PRECISION-GRADE HUMIC POWDER

A super fine-grade humic powder designed for seamless blending into liquid formulations and nutrient solutions to enhance soil and plant health.



CONTENT ANALYSIS

Humic Substances	ISO 55% Colorimetric 90%
Organic Carbon	40%
pH	3-4
Moisture	28-32%
C:N Ratio	40.1
Cation Exchange Capacity(CEC)	256 meq//100g
Bulk Density	50 lb./ft ³ (798 kg/m ³)

BLENDING INSTRUCTIONS

- DO NOT blend with urea, nitrogen-based products, DAP
- Compatible with most potassium and phosphate products, with little to NO nitrogen in the products (MAP or MEZ)
- Incompatible with urea
- Not soluble in water
- **Conduct small jar test, prior to blending**
- Apply directly to the soil or mix with a substrate

PRODUCT SHELF LIFE & STORAGE

- 3 years if stored in dry conditions
- Avoid high humidity, water and direct sunlight
- Bulk bags can be stored outdoors if dry
- Small bags must be stored indoors

APPLICATIONS



Manufacturing

APPLICATION RATES

For application rates in manufacturing, contact your Black Earth Sales Representative.

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 55 lb. (25 kg)

PARTICLE SIZE

- Powder <200 mesh

CERTIFICATIONS



EQUIPMENT COMPATIBILITY

- Manufacturing equipment
- Blending systems
- Processing equipment



MAXIMUM SOLUBILITY, MAXIMUM RESULTS

A 100% soluble humic acid powder designed for efficient liquid formulation and superior performance.



CONTENT ANALYSIS

Humic Substances	ISO 60% Colorimetric 90%
Organic Carbon	35%
pH	9-10
C:N Ratio	40:1
Cation Exchange Capacity (CEC)	275 meq/100g
Bulk Density	54 lb./ft ³ (865 kg/m ³)

BLENDING INSTRUCTIONS

- Mix 1 lb. of Fuze DS per gallon of water (129 g/L) to make a liquid humic solution comparable to the concentration of Liquid Carbon
- Do not mix with high nitrogen or phosphate liquid fertilizer solutions, such as 10-34-0
- Conduct a small-scale trial prior to blending with any fertilizer formula
- Need to agitate

PRODUCT SHELF LIFE & STORAGE

- 3 years if stored in dry conditions
- Avoid high humidity, water and direct sunlight
- Always store indoors

APPLICATIONS



Agriculture



Turf



Horticulture



Aquaculture

APPLICATION RATES

Irrigation Water	1 gal./ac. (3.8 L/ac.) (10 L/ha)
Foliar Spray	0.25-0.5 gal./ac. (1-2 L/ac.) (2.5-5 L/ha)
Pre-Plant In-Furrow	0.25-0.5 gal./ac. (1-2 L/ac.) (2.5-5 L/ha)
Side Dress and Strip-Till	0.5-2 gal./ac. (2-8 L/ac.) (5-20 L/ha)

SIZES AVAILABLE

- 2000 lb. (907 kg)
- 55 lb. (25 kg)

PARTICLE SIZE

- Powder <0.5 mm

EQUIPMENT COMPATIBILITY

- Irrigation systems
- Spraying equipment
- Liquid blending systems
- Manufacturing equipment

CERTIFICATIONS



ALL PRODUCTS

SPECIFICATIONS OVERVIEW

Last updated August 18, 2025

GRANULARS

Products over 1.0 mm

PRODUCT	PARTICLE SIZES	PACKAGE SIZES				HUMIC SUBSTANCES % BY SCALE		ORGANIC CARBON	SALT INDEX (Jackson Method)	CEC	PH	MOISTURE %	C:N RATIO	FULVIC ACID % ISO 19822	SOLUBILITY %	BULK DENSITY	
						ISO 19822	CDFA									Lbs./cubic foot	Density
AG4	2 to 5 mm	55 lb.	2000 lb.	1000 KG	1089 KG	60%	50%	40%	0.4	114 meq/100g	3 to 4	28% to 32%	40:1	5.0%	46	740	
GG16	1 to 2 mm	55 lb.	2000 lb.	Bulk		60%	50%	40%	0.5	154 meq/100g	3 to 4	28% to 32%	40:1	5.0%	48	767	
MAGNA	2 to 5 mm	50 lb.	2000 lb.			50%	50%	43%	7.8	257 meq/100g	9 to 10	13%	40:1	5.0%	60%	40	640
DUAL ACTION	2 to 5 mm	55 lb.	2000 lb.			50%	50%	31%	N/A	157 meq/100g	4 to 6	23%	40:1	5.0%	25%	44	707

LIQUIDS

PRODUCT	PACKAGE SIZES		HUMIC SUBSTANCES % BY SCALE			CEC	ORGANIC CARBON	SALT INDEX (Jackson Method)	PH	MOISTURE %	C:N RATIO	FULVIC ACID % BY SCALE Colorimetric	SOLUBILITY %	BULK DENSITY	
			ISO 19822	Colorimetric	CDFA									Lbs./gallon	Kg/litre
Alpha	256 Gallon	1000 Liter	2.0%	3.5%	2.0%	235 meq/100g	1.01%	0.3	5 to 6		50:1	3%		8.43	1.01
Keal	256 Gallon	1000 Liter	0.3%		0.3%	325 meq/100g	0.60%	2.1	9 to 11		50:1	6%		8.43	1.01
Liquid Carbon	256 Gallon	1000 Liter		12.0%		300 meq/100g	4.49%	3.6	9 to 11		50:1	N/A		8.76	1.05
Liquid Carbon HC	256 Gallon	1000 Liter		24.0%		288 meq/100g	7.70%	5.4	10 to 12		50:1	N/A		9.26	1.11

POWDERS

Products under 0.5 mm

PRODUCT	PARTICLE SIZES	PACKAGE SIZES				HUMIC SUBSTANCES % BY SCALE		ORGANIC CARBON	SALT INDEX (Jackson Method)	CEC	PH	MOISTURE %	C:N RATIO	FULVIC ACID % ISO 19822	SOLUBILITY %	BULK DENSITY	
						ISO 19822	CDFA									Lbs./cubic foot	Density
XP100	Powder	55 lb.	2000 lb.			55%	50%	40%	0.6	256 meq/100g	3 to 4	N/A	40:1	5.0%	50	798	
FUZE DS	Powder	55 lb.	2000 lb.			60%	60%	35%	13.2	275 meq/100g	9 to 10	N/A	40:1	5.0%	90%	54	865
MP30	< 1.0 mm	55 lb.	2000 lb.	Bulk		55%	50%	40%	0.4	185 meq/100g	3 to 4	N/A	40:1	5.0%	48	774	

RAW ANALYSIS

Parameter	Level (min/current/max)			Unit
Humic Acid (ISO 19822)	60	65.3	68	%
Hydrophobic Fulvic Acid (ISO 19822)	2	2.9	10	%
Total Organic Matter	49	52.58	61	%
Ash	12	18.52	20	%
Moisture	24	28.9	32	%
Ph	3.5	4.2	5.5	SU
Electric Conductivity	2			dS/m
Total Organic Carbon	40			%
Total Carbon, C	32			%
Total Nitrogen, N	1			%
C:N ratio	29:1			
CEC	272			meq/100g
Water Solubility	6.3			%
Arsenic, As	1	2.5	3	ppm
Cadmium, Cd	0	0.1	0.2	ppm
Chromium, Cr	1	2	5	ppm
Lead, Pb	3	7	15	ppm
Mercury, Hg	0	<0.1	0.1	ppm
Aluminum, Al	0.4			%
Boron, B	119			ppm
Calcium, Ca	0.9			%
Cobalt, Co	0.6	1	3	ppm
Copper, Cu	2	3	6	ppm
Iron, Fe	5840			ppm
Magnesium, Mg	1.2			%
Manganese, Mn	241			ppm
Molybdenum, Mo	1		3	ppm
Nickel, Ni	1	2	4	ppm
Phosphorus, P ₂ O ₅	0.007			%
Potassium, K ₂ O	0.034			%
Selenium, Se	1		4	ppm
Silicon, Si	259			ppm
Sodium, Na	0.139			%
Sulfur, S	0.3			%
Zinc, Zn	4	10	20	ppm

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This Certificate of Analysis is intended to provide a representative overview of the Humalite material being mined at the time of sampling. This Certificate of Analysis is provided for informational purposes only and does not constitute a guarantee, warranty, or specification of the product. Humalite is a naturally occurring mineral, and due to inherent geological variability, the composition of the material will vary across the deposit. Actual product supplied may vary and may not fall strictly within the stated ranges. WestMET makes no expressed or implied representations regarding the exact composition of any individual shipment. These results apply only to the items tested. We are committed to consistent quality and encourage customers to contact us if specific characteristics are required for their application. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of WestMET.

CONTACT US

sales@blackearth.com | 403-930-1964



www.blackearth.com

Suite 1270, 5555 Calgary Trail NW
Edmonton, AB Canada
T6H 5P9

