



Our Company and Products

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Supporting the global transition to clean & renewable energy

Building a vertically integrated battery anode materials business to produce high purity graphite products for the lithium-ion battery and advanced manufacturing markets



EcoGraf Business Pillars

UPSTREAM



MIDSTREAM



DOWNSTREAM



RECYCLE



UPSTREAM

Mining and Mineral Processing to Produce Natural Flake Graphite

The Epanko Graphite Project is a long life, highly profitable graphite project located approximately 370km from the city of Dar es Salaam in Tanzania. In 2017, a pre-development program was completed resulting in an extensive Bankable Feasibility Study, which was subject to a rigorous due diligence process by bank appointed independent engineers, SRK Consulting (UK) Limited. The results of the pre-development program positioned the project as a world class new graphite development. It is forecast to initially produce 73,000 tonnes of natural flake graphite products each year.

MULTI-STAGE EXPANSION TARGET

300,000 tpa

MINE LIFE

>40 years

DIRECT EMPLOYMENT

300

INDIRECT EMPLOYMENT

4,500

Epanko Highlights

CONTAINED GRAPHITE

21 MT

FLAKE SIZE % > 150µm

83%/63%

STRIP RATIO

0.3:1

DISTANCE TO PORT ROAD

450 km

DISTANCE TO RAIL

120 km



MIDSTREAM

Micronising and spheronising of flake graphite to produce spherical graphite

There are two processing steps necessary for the manufacture of spherical graphite for battery anode production. Mechanical micronisation is the first step and then followed by mechanical spheronisation in continuous mode in the conversion of high-quality flake graphite concentrate into battery grade anode material used in the production of lithium-ion batteries. An engineering study has been completed for the development of a spherical graphite facility in Tanzania and the location is under consideration. The location will have access to transportation infrastructure, site services, skilled personnel and containerised export facilities.

LOW COST

Hydropower

LOW CO₂

Energy

UNPURIFIED SPG

99.5%C

PARTICLE SIZE

10-25 micron



DOWNSTREAM

HFfree Purification of Spherical Graphite (SPG) to produce Purified SpG

The Company is developing a battery anode material business that will provide a new supply of high quality purified spherical graphite for the high growth lithium-ion battery market, using its HFfree purification process developed in Australia and Germany. The EcoGraf HFfree™ purification process has been refined through extensive testing and analysis conducted by EcoGraf in Australia, Europe and Asia, with the Company also lodging patents and trademarks in key global lithium-ion battery markets.

Using its environmentally superior purification technology, the Company will upgrade the flake graphite to produce 99.95%C high performance battery anode material to supply electric vehicle, battery and anode manufacturers in Asia, Europe and North America as the world transitions to clean, renewable energy.

PURIFIED GRAPHITE
99.99%C

DISCHARGE
>362 mAh/g

US PATENT
Approved

CO₂ EQ. PER KG CSPG
5.0 – 10.6 Kg



RECYCLE

EcoGraf purification technology with sector leading ESG credentials to support battery recycling

Battery recycling is critical to improving supply chain sustainability and the Company's successful application of the EcoGraf HFfree™ purification process to recover and re-use anode materials provides it with a unique ability to support customers to reduce CO2 emissions and lower battery costs.

With an initial focus on production scrap from anode cell and battery manufacturing the Company's anode recycling programs are supported by legislative developments to promote closed-loop manufacturing systems within the battery supply chain.

PURIFIED SPG

99.5%C

DISCHARGE

>350 mAh/g

CYCLING STABILITY

80% after 1000 cycles

CO₂ EQ. PER KG CSPG

1.6 – 2.2 Kg



Sustainability

Sector leading ESG credentials for a clean energy future

EcoGraf is committed to establishing strong sustainability foundations and credentials throughout its operations, supported by a robust governance system. We are contributing to the global transition toward a cleaner environment through our vertically integrated battery anode materials business which will produce high purity graphite products for the lithium-ion battery and advanced manufacturing markets.

Overview



Engineering Clean Energy with Tanzanian Graphite and EcoGraf HFfree™ Purification Technology

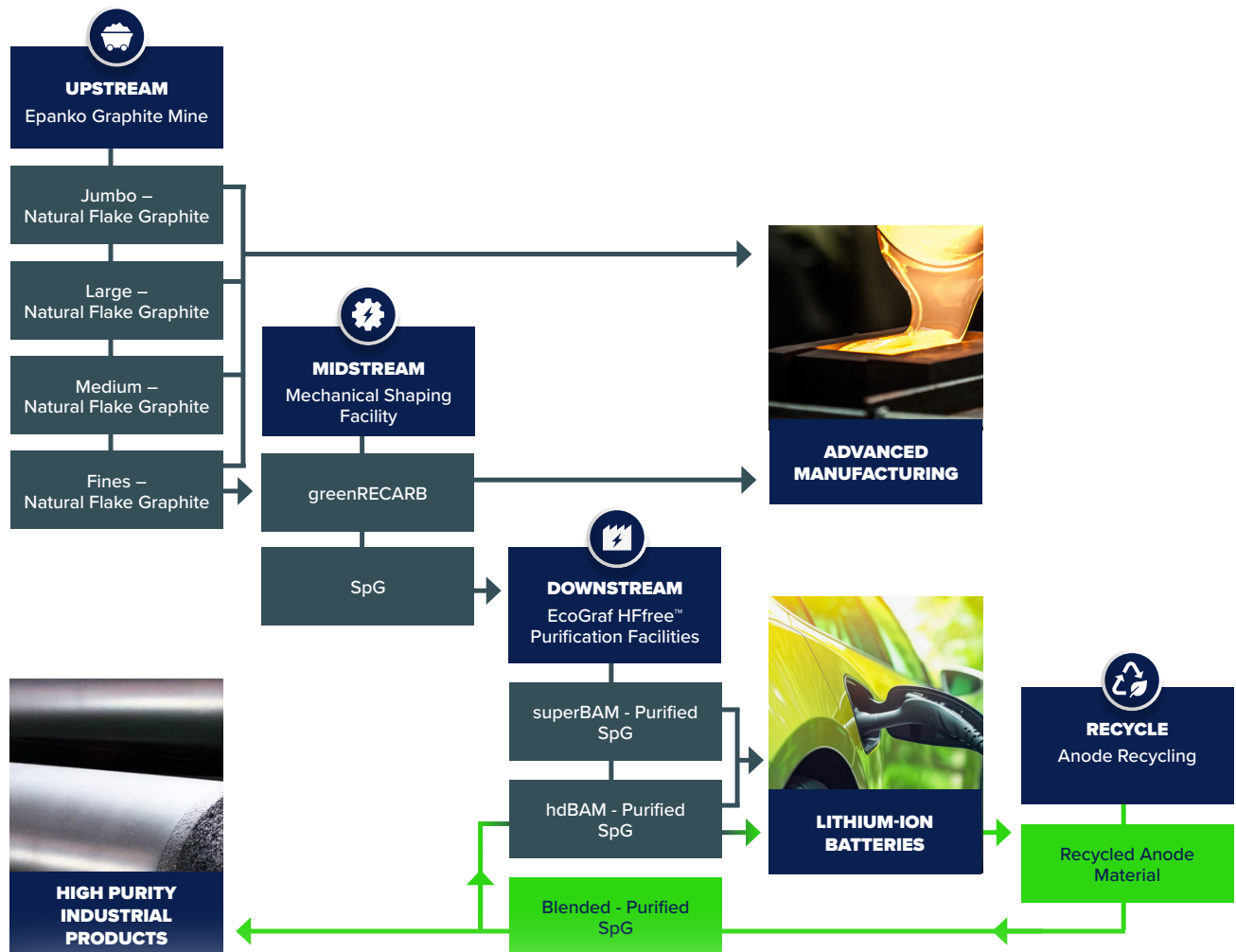
EcoGraf is building a vertically integrated battery anode materials business to produce high purity graphite products for the lithium-ion battery and advanced manufacturing markets.

In Tanzania, the Company is developing the TanzGraphite natural flake graphite business, commencing with the Epanko Graphite Project, to provide a long-term, scalable supply of feedstock for EcoGraf™ battery anode material processing facilities, together with high quality large flake graphite products for specialised industrial applications.

In addition, the Company has finalised its planned location for its Mechanical Shaping Facility in Tanzania, which will manufacture natural flake graphite into spherical graphite. This mechanical micronising and shaping is the first step in the conversion of high-quality flake graphite concentrate into battery grade anode material used in the production of lithium-ion batteries.

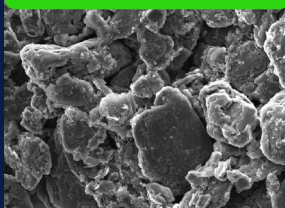
Using its environmentally superior EcoGraf HFfree™ purification technology, the Company will upgrade the flake graphite to produce 99.95%C high performance battery anode material to supply electric vehicle, battery and anode manufacturers in Asia, Europe and North America as the world transitions to clean, renewable energy. Battery recycling is critical to improving supply chain sustainability and the Company's successful application of the EcoGraf™ purification process, to recycle battery anode material, provides it with a unique ability to support customers to reduce CO2 emissions and lower battery costs.

Product Map

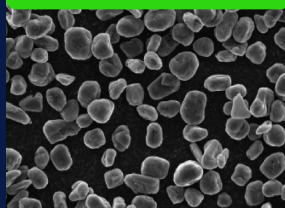


EcoGraf Products

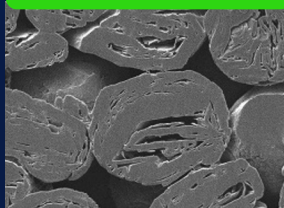
FLAKE GRAPHITE



UNPURIFIED SPG



PURIFIED SPG



FINES



Customer applications

NATURAL FLAKE GRAPHITE

- ✓ High Crystallinity and high degree of graphitization expected to generate higher conductivity and material density
- ✓ Enhanced product consistency through a single source deposit and high-quality product
- ✓ High expansion rate for Jumbo which is up to 30% higher than the current market supply
- ✓ Ash melting point of 1,350°C confirms its suitability in premium refractory material
- ✓ Testwork confirms no limitation on industrial graphite application
- ✓ Environmentally sustainable graphite production

ADVANCED MANUFACTURING

Our Epanko natural flake products mined in Tanzania are highly suitable for end-uses such as: refractory, cast & grey cast steel foundry/EAF furnace.



BATTERY ANODE MATERIAL

- ✓ Superior quality
- ✓ High charge/ discharge efficiency
- ✓ Enhanced product consistency through a single source deposit and high-quality product
- ✓ Typified by a high tap density, quality shape factor and narrow size distribution
- ✓ Environmentally sustainable graphite production

LITHIUM-ION BATTERIES

Our battery anode materials are suitable for the lithium-ion battery industry including end-use such as: electric vehicles, electronics and energy storage systems.



GREEN RECARB – VALUE-ADD BY-PRODUCT

- ✓ Naturally occurring, heat resistant, highly conductive (electrically and thermally) high lubricity and low cost.
- ✓ Low levels of sulphur and nitrogen and exhibits high carbon absorption efficiency
- ✓ High quality, cost competitive and environmentally superior product compared to petroleum coke additives

ADVANCED MANUFACTURING

GreenRECARB™ is a recarburiser additive for use in the steel manufacturing, green steel and Foundry/ EAF furnace industries.





Our Products

Natural Flake Graphite Products

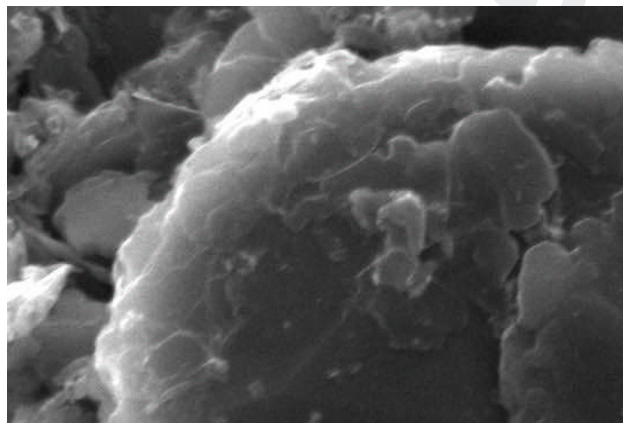
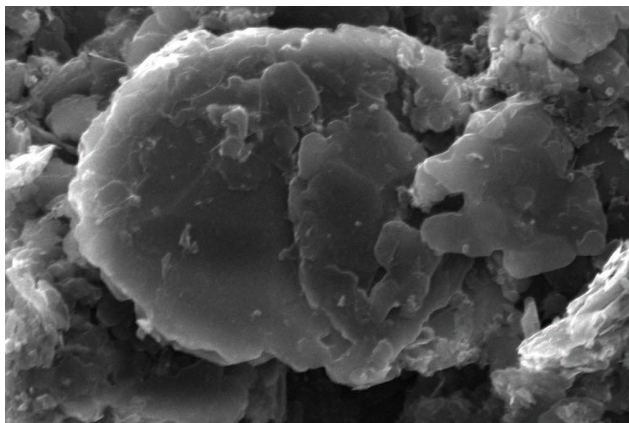
EcoGraf will initially produce natural graphite products across 4 different mesh sizes at Epanko.

Epanko's natural graphite product mesh sizes range from +50 mesh (jumbo) to -100 mesh (fines). Epanko will also supply flake with properties outside of typical market specifications to special purpose customers for various advanced manufacturing markets. Epanko flake products have a competitive advantage with a fixed carbon content of between 95% and 97%.

Epanko - Jumbo



NATURAL CRYSTALLINE FLAKE GRAPHITE



TanzGraphite Jumbo

+50 MESH (+300µm)

PROPERTIES	ANALYSIS	UNIT	VALUE
Particle Size	Vibration Sieve	%min. retain. accum. +50 Mesh (+300µm)	80.0
Purity	Fixed Carbon Content	% min.	97.0
	Ash Content	% max.	3.0
	Volatiles	% max.	1.0
	Moisture Content	% max.	0.5
	Sulfur Content	ppm max.	500
	Nitrogen Content	ppm max.	500
Density	Loose	g/cm ³	0.5-0.7
	Tap	g/cm ³	0.6-0.9
Material Shipping	Bulk Bags	kg.	1,000

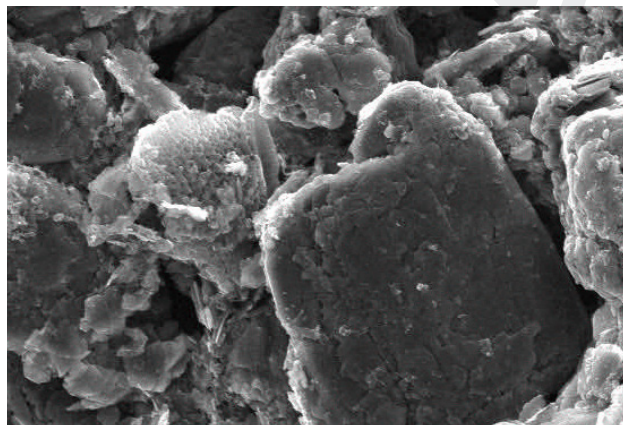
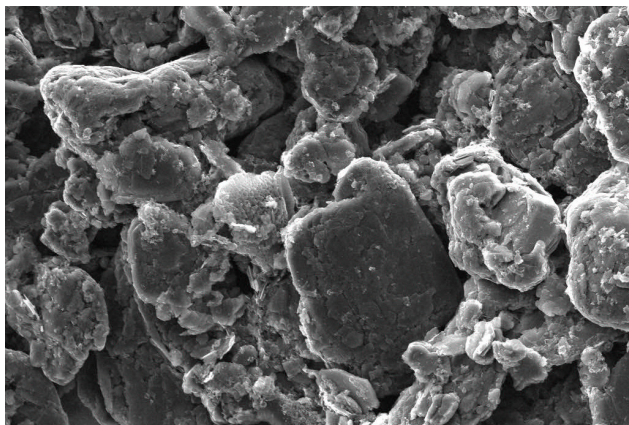
FLAKE SIZE DISTRIBUTION

Classification	FLAKE SIZE		FLAKE DISTRIBUTION
	Micron	Mesh	(% Retained)
Jumbo	+300	+50	16

Epanko - Large



NATURAL CRYSTALLINE FLAKE GRAPHITE



TanzGraphite Coarse

+80 MESH (+180 μ m)

PROPERTIES	ANALYSIS	UNIT	VALUE
Particle Size	Vibration Sieve	%min. retain. accum. +80 Mesh (+180 μ m)	80.0
Purity	Fixed Carbon Content	% min.	96.0
	Ash Content	% max.	4.0
	Volatiles	% max.	1.2
	Moisture Content	% max.	0.5
	Sulfur Content	ppm max.	500
	Nitrogen Content	ppm max.	500
Density	Loose	g/cm ³	0.5-0.7
	Tap	g/cm ³	0.6-0.9
Material Shipping	Bulk Bags	kg.	1,000

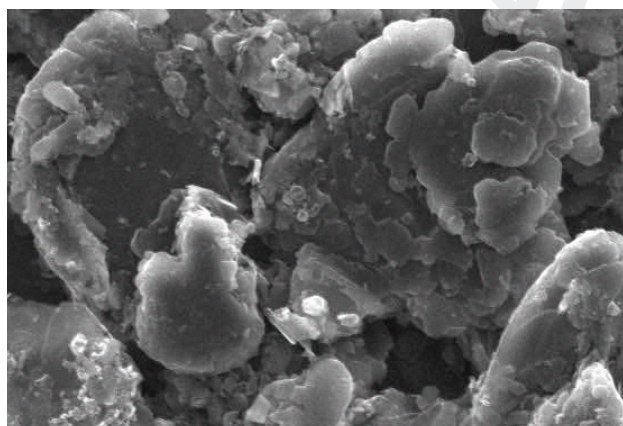
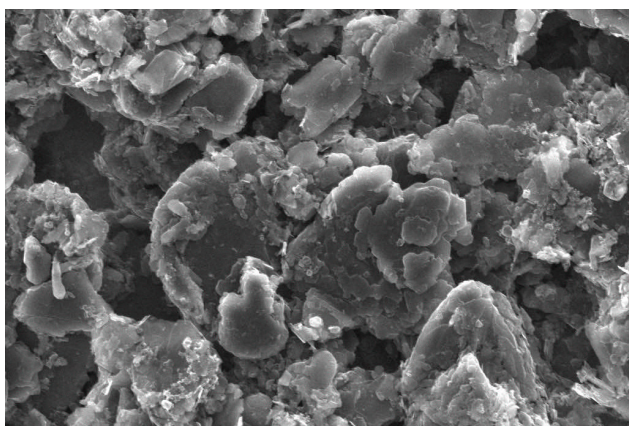
FLAKE SIZE DISTRIBUTION

Classification	FLAKE SIZE		FLAKE DISTRIBUTION
	Micron	Mesh	(% Retained)
Large	+180	+80	32

Epanko - Flake



NATURAL CRYSTALLINE FLAKE GRAPHITE



TanzGraphite Flake

+100 MESH (+150µm)

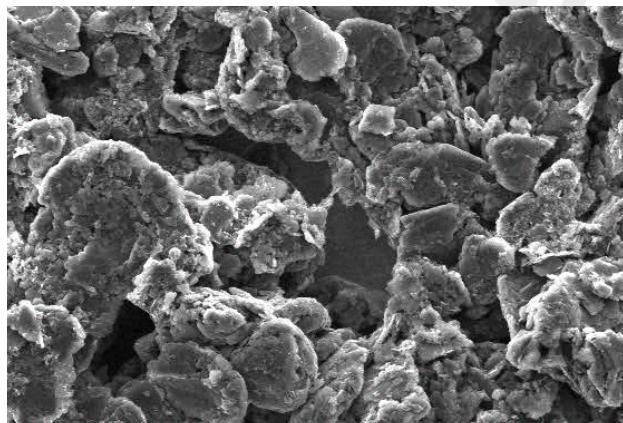
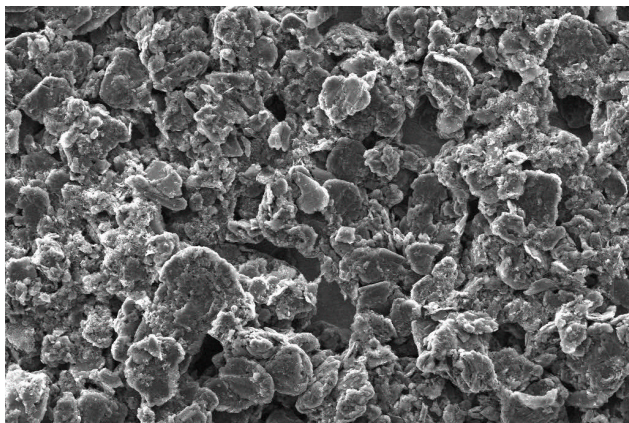
PROPERTIES	ANALYSIS	UNIT	VALUE
Particle Size	Vibration Sieve	%min. retain. accum. +100 Mesh (+150µm)	80.0
Purity	Fixed Carbon Content	% min.	95.5
	Ash Content	% max.	4.5
	Volatiles	% max.	1.2
	Moisture Content	% max.	0.5
	Sulfur Content	ppm max.	500
	Nitrogen Content	ppm max.	500
Density	Loose	g/cm ³	0.5-0.7
	Tap	g/cm ³	0.6-0.9
Material Shipping	Bulk Bags	kg.	1,000

FLAKE SIZE DISTRIBUTION

Classification	FLAKE SIZE		FLAKE DISTRIBUTION
	Micron	Mesh	(% Retained)
Flake	+150	+100	14

Epanko - Fines

NATURAL CRYSTALLINE FLAKE GRAPHITE



TanzGraphite Fines

-100 MESH (-150 μ m)

PROPERTIES	ANALYSIS	UNIT	VALUE
Particle Size	Vibration Sieve	%min. retain. accum. -100 Mesh (-150 μ m)	80.0
Purity	Fixed Carbon Content	% min.	95.0
	Ash Content	% max.	5.0
	Volatiles	% max.	1.2
	Moisture Content	% max.	0.5
	Sulfur Content	ppm max.	500
	Nitrogen Content	ppm max.	500
Density	Loose	g/cm ³	0.5-0.7
	Tap	g/cm ³	0.6-0.9
Material Shipping	Bulk Bags	kg.	1,000

FLAKE SIZE DISTRIBUTION

Classification	FLAKE SIZE		FLAKE DISTRIBUTION
	Micron	Mesh	(% Retained)
Fine	-150	-100	35

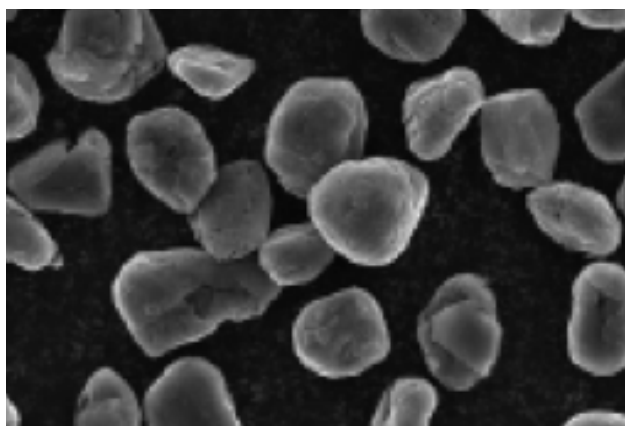
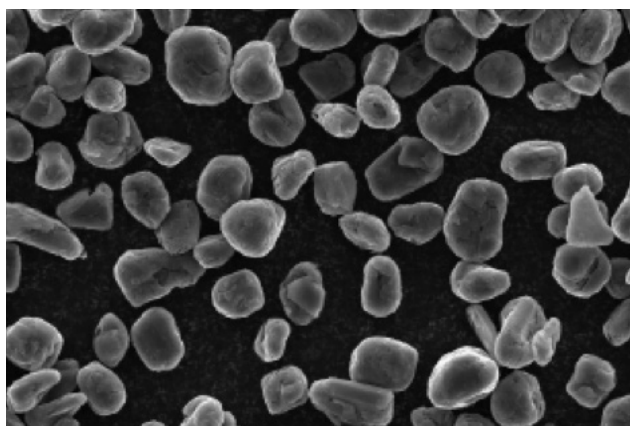
Battery Anode Material Products

EcoGraf is developing battery anode material products from Epanko for the lithium-ion battery market.

EcoGraf's high purity battery anode material products are being developed alongside global customers in existing battery manufacturing hubs. Our anode products are under qualification and in iterative testing programs with leading battery manufacturers and auto OEMs. The company is working on efficiencies and optimisation to ensure EcoGraf provides a cost- competitive supply in the battery anode market. The company has executed and working towards commercial supply agreements for battery anode material from Epanko with tier 1 integrated battery manufacturers and auto OEMs.

Unpurified SpG

GRADE: EPANKO UNPURIFIED SPG16

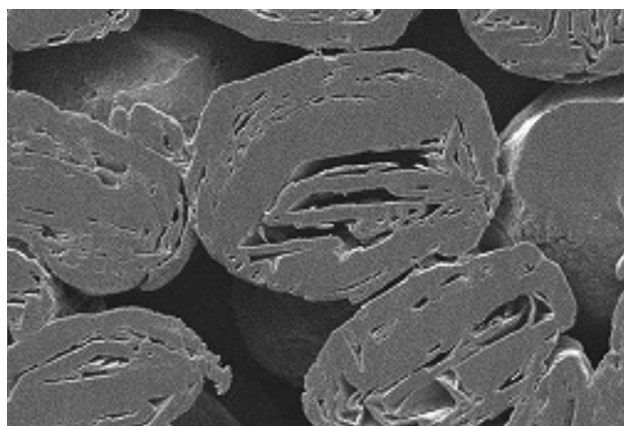
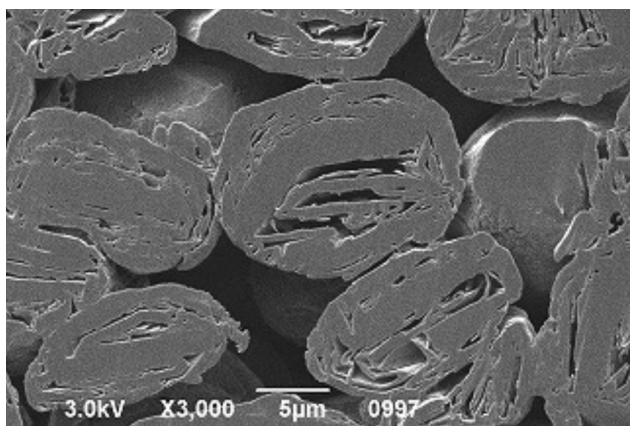


Epanko Unpurified Natural Spherical Graphite

PROPERTIES	ANALYSIS	UNIT	VALUE*
Purity	Carbon Content (LOI)	% min.	97.92
	Fixed Carbon	% max.	96.64
	Ash Content	% max.	2.08
Inpurities	Al	ppm max.	2,600
	Ca	ppm max.	1,450
	Cr	ppm max.	5
	Cu	ppm max.	12
	Fe	ppm max.	1560
	Mg	ppm max.	524
	Ni	ppm max.	4
	Si	ppm max.	4,390
	Zr	ppm max.	52
Particle Size Analysis	d10	micron	11.0+/-1.0
	d50	micron	16.0+/-0.5
	d90	micron	23.5+/-1.0
	BET SSA	m ² /g	6.0+/-0.3
Density	Tap Density	g/cm ³	0.93+/-0.03

Purified SpG - hdBAM

GRADE: PURIFIED SPG (HDBAM)



Epanko Purified Natural Spherical Graphite

PROPERTIES	ANALYSIS	UNIT	VALUE*
Purity	Fixed Carbon Content	% min.	99.95
	Ash Content	% max.	0.05
	Moisture Content	% max.	0.5
Inpurities	Fe	ppm max.	20
	Cl	ppm max.	30
	Na	ppm max.	10
	Cr	ppm max.	5
	Cu	ppm max.	5
	Ni	ppm max.	4
	Al	ppm max.	12
	S	ppm max.	15
	Si	ppm max.	40
	Ca	ppm max.	20
pH	Proximate analysis	0-14	5-7.0
Density	True	g/cm ³	2.26
	Bulk	g/cm ³	0.7-0.9
	Tap	g/cm ³	0.8-1.05
	Compressed	g/cm ³	1.5-1.8
Crystallinity	XRD – d002 spacing	Å	3.354
Specific Surface Area	B.E.T. (Nitrogen)	m ² /g	4-7

Purified SpG - hdBAM

GRADE: PURIFIED SPG (HDBAM)

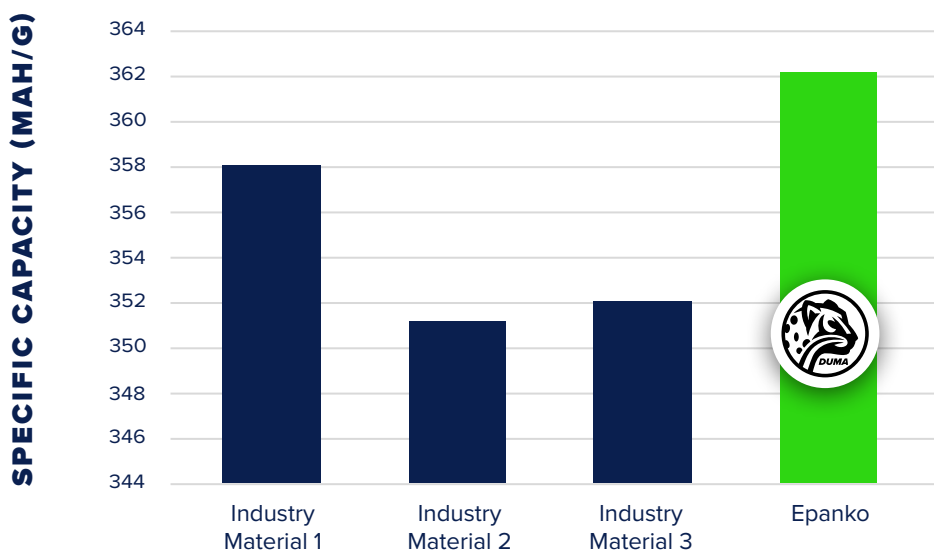
ELECTROCHEMICAL PROPERTIES	ANALYSIS	UNIT	VALUE*
First Discharge Capacity	Coin Cell, 92% active	mAh/g	356-368
First Discharge Efficiency	Coin Cell, 92% active	%	91-94

*Electrochemical analysis on coated high-density spherical graphite

Particle Size Distributions

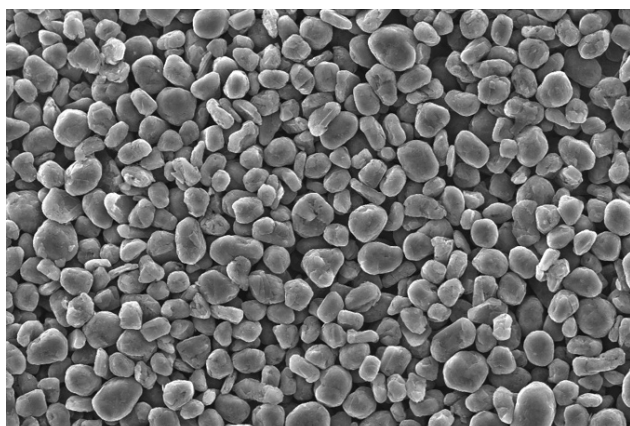
PARTICLE SIZE	ANALYSIS	PSD	VALUES*
Particle Size Analysis	Malvern Laser PSA	D10	6-14 μm
		D50	10-23 μm
		D90	17-30 μm
		D99	21-45 μm

Epanko flake concentrate is optimal feed material for the production of superior quality spherical graphite suited for end-use in the lithium-ion battery market.



Purified SpG - superBAM

GRADE: PURIFIED SPG10 (SUPERBAM)

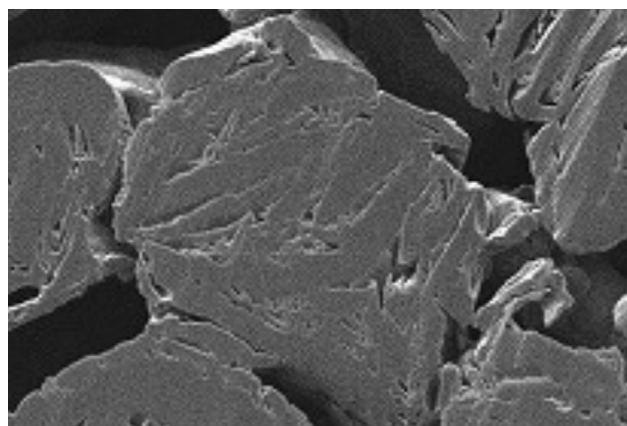
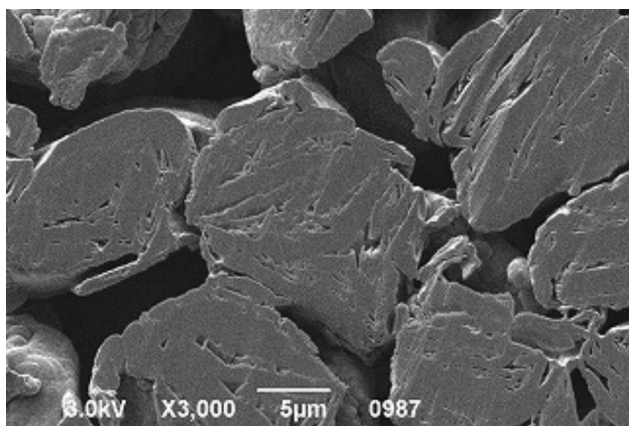


Epanko Purified Natural Spherical Graphite

PROPERTIES	ANALYSIS	UNIT	VALUE*
Purity	Carbon Content (LOI)	% min.	99.95
	Ash Content	% max.	0.05
	Moisture Content	% max.	<0.05%
Inpurities	Al	ppm max.	≤12
	Ca	ppm max.	≤20
	Cr	ppm max.	≤5
	Cu	ppm max.	≤5
	Fe	ppm max.	≤20
	Ni	ppm max.	≤4
	Si	ppm max.	≤20
	S	ppm max.	≤15
	Zn	ppm max.	≤4
Particle Size Analysis	d10	micron	6.5+/-0.5
	d50	micron	10.0+/-1.0
	d90	micron	15.0+/-1.0
	dmax	micron	25.0
	BET SSA	m ² /g	7.5+/-0.5
Density	Tap Density	g/cm ³	0.90-0.93
Battery Evaluation (Half Cell)	Discharge Capacity	mAh/g	365.0
	First Cycle Efficiency	%	93.30

Purified Coated SpG

GRADE: PURIFIED COATED SPG15



Epanko Purified and Coated Natural Spherical Graphite

PROPERTIES	ANALYSIS	UNIT	VALUE*
Purity	Fixed Carbon Content	% min.	99.8
	Ash Content	% max.	0.02
	Moisture Content	% max.	<0.1
Inpurities	Al	ppm max.	4.1
	Ca	ppm max.	3.2
	Cr	ppm max.	1.0
	Cu	ppm max.	<1.0
	Fe	ppm max.	4.9
	Ni	ppm max.	2.0
	Si	ppm max.	6.7
Particle Size Analysis	d10	micron	9.3
	d50	micron	14.6
	d90	micron	23.0
	BET SSA	m ² /g	2.5 - 3.3
Density	Tap Density	g/cm ³	1.1
Battery Evaluation (Half Cell)	Discharge Capacity	mAh/g	365.0
	First Cycle Efficiency	%	93.3
Battery Evaluation (Full Cell)	Capacity Retention (%) @100th cycle	%	95.3

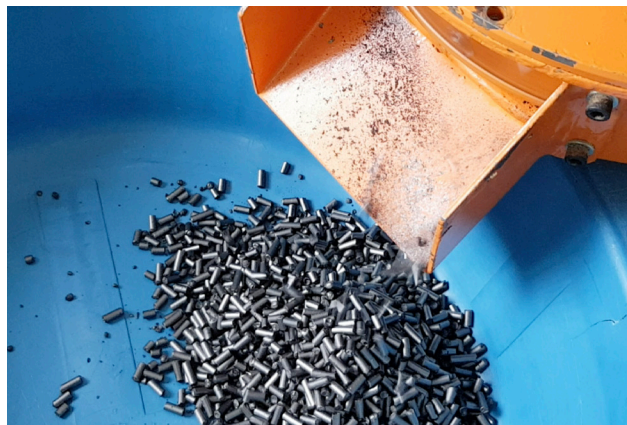
Value-add By-products

EcoGraf is developing multiple value-add by-products to maximise sustainability, bottom-line and to work towards a zero-waste operation.

GreenRecarb is a by-product from EcoGraf's natural flake graphite fines processing, producing in an environmentally superior recarburiser additive. This product has highly heat resistant, is highly conductive and has high levels of lubricity with low levels of sulphur and nitrogen at a low cost to customers. These advantages make GreenRECARB a superior substitute for polluting petroleum coke additives for steel manufacturing and an ideal solution for the rapidly emerging green steel industry. customers for various advanced manufacturing markets. Epanko natural graphite products have a fixed carbon content of between 95% and 97%.

Green ReCARB

GRADE: PELLITISED GRAPHITE RECARBURISER



A green Carbon additive for steel manufacturing

	G	T	G	T	G	T	G	T
Carbon %	≥ 92.0	92.6	≥ 92.0	93.1	≥ 92.0	92.2	≥ 95.0	95.2
Ash %	≤ 8.0	7.4	≤ 8.0	6.9	≤ 8.0	7.8	≤ 5.0	4.8
Volatiles %	NS	1.05	NS	1.03	NS	1.08	NS	1.01
Moisture %	≤ 0.3	0.09	≤ 0.3	0.08	≤ 0.3	0.08	≤ 0.3	0.07
Nitrogen ppm	≤ 300	90	≤ 300	87	≤ 300	110	≤ 300	83
Sulphur ppm	≤ 500	74	≤ 300	49	≤ 500	90	≤ 400	51
Hydrogen ppm	NS	1290	NS	1250	NS	1280	NS	1250

G – Guaranteed limit T – Typical values NS – Not specified

CHEMICAL ANALYSIS

	VALUE
Carbon content - LOI (Loss on Ignition)	90.0-93.0
Ash content	7.0-10.0
Moisture content (% max)	0.5
Volatiles	3.0-6.0

Maximum Impurity Limits (%)

S (500 ppm)	0.05
N (300 ppm)	0.03

PHYSICAL PROPERTIES

	VALUE
Pellet diameter(mm)	4.0
Pellet length (mm)	5.0-10.0
Crushing strength (kg/grain)	1.0 - 2.0



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ASX: **EGR** FSE: **FMK**

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DISCLAIMER: The information presented within this document was generated through extensive testwork and collating general product specifics. It should not be assumed that specifications are guaranteed or resolute.