

PROCENE[®] TECHNICAL DATA SHEET

SUPPLIER	
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CAS NUMBER:	1024343-98-0
PRODUCT:	ProCene [®]
PRODUCT DESCRIPTION	
ProCene is a very few layer turbostratic graphene in dry powder form that is produced via pyrolysis of biomass in particle sizes ranging from 6 to 25 microns.	

PRODUCTION INFORMATION	
PRODUCTION METHOD	Pyrolysis
RAW MATERIAL	Biomass
FORMS OF MATERIALS	Dry Powder (Pwd)

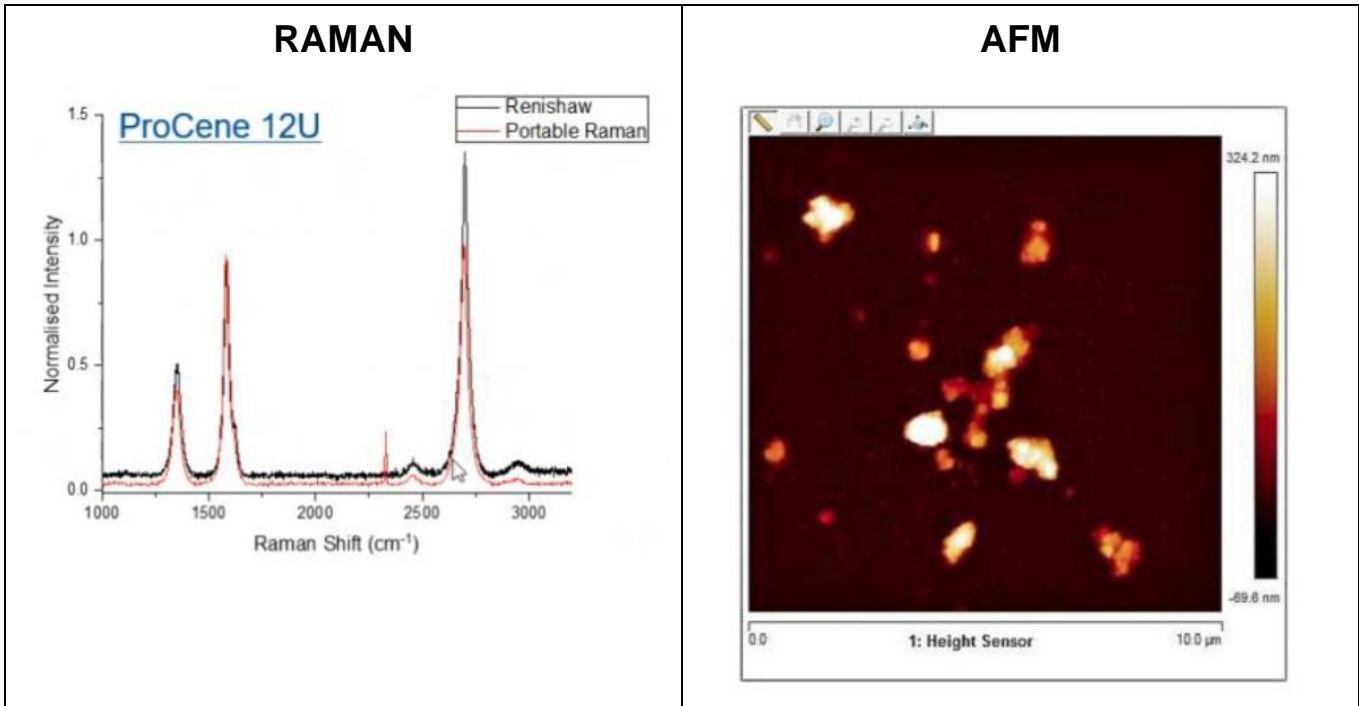
CHARACTERISTIC	TEST METHOD	VALUE (*D90)
SP2 Bonded Carbon	X-ray Photoelectron Spectroscopy (XPS)	Yes
Structural Defects	Raman Spectroscopy (Raman)	"Large" defects, "Good" crystallinity
Number of Layers	Raman	Very few
Z-Axis Dimensions	Raman	35 nm
Primary Particle Shape	Scanning Electron Microscopy (SEM)	Platelet
Lateral Dimensions	Microtrac Particle Size Analyzer	26 microns
Aspect Ratio	Microtrac Particle Size Analyzer	1000
Tapped Bulk Density	Tapped density measurement	0.5 g/cm ³
Chemical/Elemental Composition	Inductively Coupled Plasma Spectroscopy (ICP)	99.9% Carbon 0.0012% Hydrogen 0.0018% Oxygen 0.0042% Nitrogen 0.0030% Sulfur 0.0010% Chlorine 0.0550% Metals
Oxygen Content %w	CHN 828 Leco Elemental Analyzer	0%
Impurities %w	CHN 828 Leco Elemental Analyzer + ICP	<0.1%

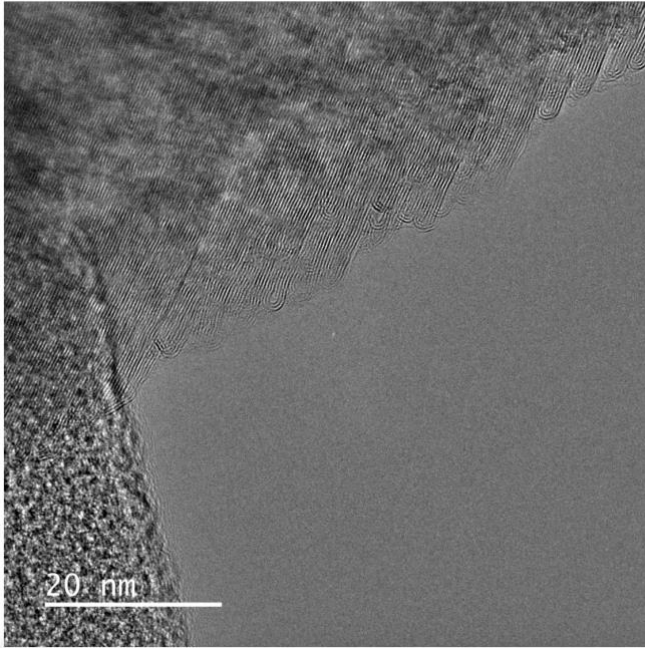
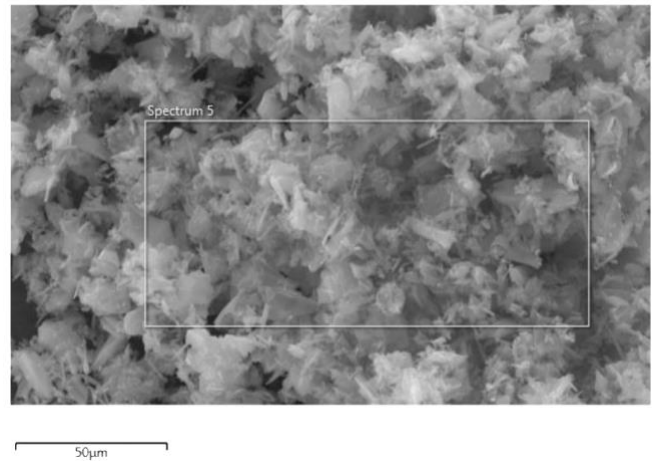
Graphene Orientation	Transmission Electron Microscopy (TEM)	Turbostratic
Specific Surface Area (SSA)		tbd
Crystallinity	X-ray Diffraction	Crystalline

DETAILED TECHNICAL ASPECTS

PARAMETERS	
Appearance	Dry, black powder
Shape and Form	Platelets in dry, black powder
C/O ratio	50,000
Color	Black
Odor	None
Solubility in water	Not soluble
Dispersibility	Hydrophobic
Electrical Conductivity	40,000 Siemens/cm
Thermal Conductivity	2200 W/m/K
Capacitance	217 F/g

GRAPHS AND IMAGES



TEM**SEM****ADDITIONAL COMMENTS**

ProCene is produced from ProC[®] biochar which is a co-product of Proton Power, Inc. (PPI) systems that also produce renewable diesel, renewable hydrogen, or electricity. Therefore, because the ProC is produced from carbon removed from the atmosphere by plants, the ProCene produced by PPI is environmentally friendly due to its extremely low carbon footprint.