White Graphene Enhanced PU Leather

Key findings:

White Graphene (WG) enhances properties of polyurethane leather, including wear resistance, tensile strength, chemical resistance, anti-hydrolysis and anti-bacterial.

Abrasion resistance:	+179%
Tear strength:	+39%
Tensile strength:	+105%
Chemical resistance:	+84% (NaOH) & +75% (H_2SO_4)
Anti-hydrolysis:	+330%

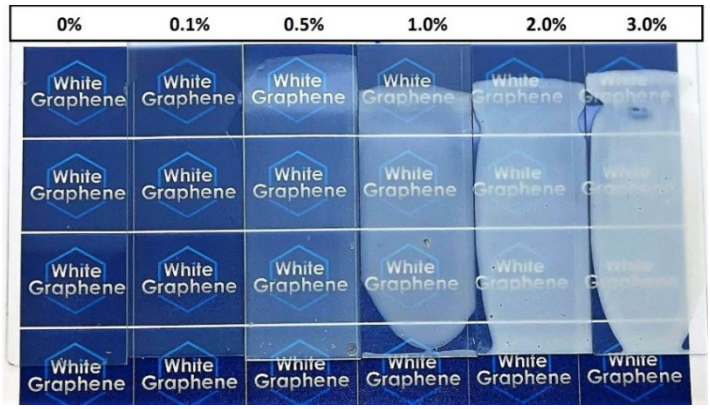


Figure 1. The appearance of the PU films with different concentrations of White Graphene.

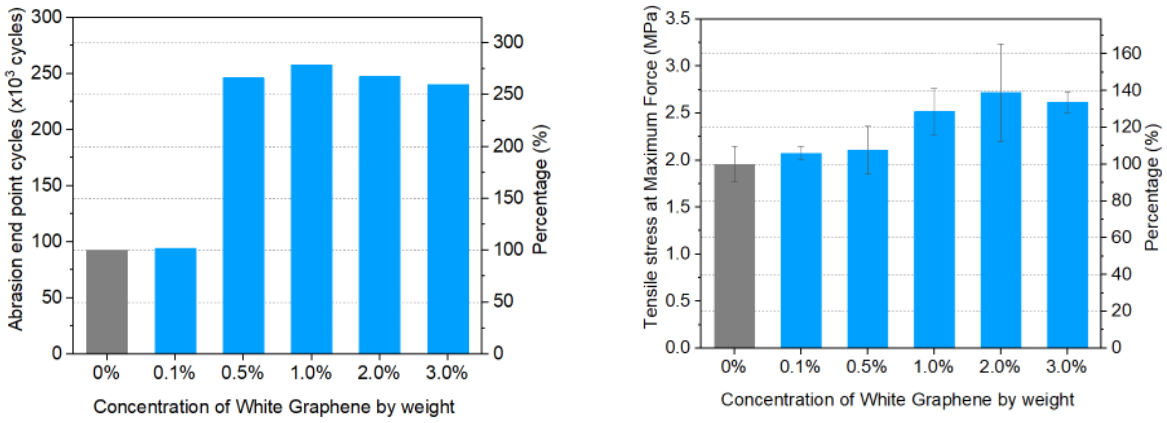


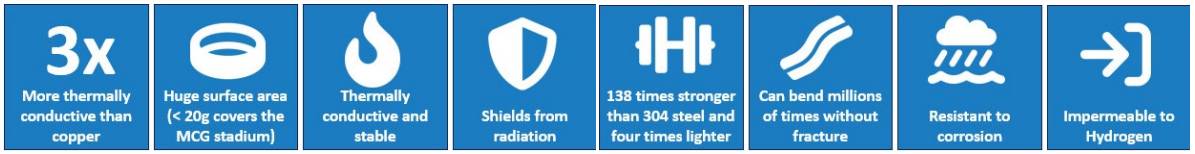
Figure 2. Left: Abrasion resistance; right: tear strength of White Graphene at different loadings.

White Graphene

A novel two-dimensional layered nanomaterial - BNNS







PRODUCT CHARACTERISTICS	METHDOLOGY	STANDARD
Appearance	Visual	White solid powder
Lateral Size	Scanning Electron Microscope	0.3-10 µm
Lateral Aspect ratio	Scanning Electron Microscope	1:1 - 1:30
Thickness	Atomic Force Microscope	1-50 nm
Bulk density	EN17199-1 weighting method	0.055 g/cm³
Respirable dustiness fraction	EN17199 Small Rotating drum (M4)	55 mg/kg
Water solubility	OECD 105 Flask Method	Insoluble
Chemical composition and Impurities	Raman Spectroscopy	BN vibrational peak
	Fourier-transform infrared spectroscopy	BN vibrational peaks
	Energy-Dispersive X-ray Spectroscopy	B & N > 98% O < 2% Other < 0.5%
Surface functionalization	-	Customized

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