White Graphene Enhanced Interior Paint Properties

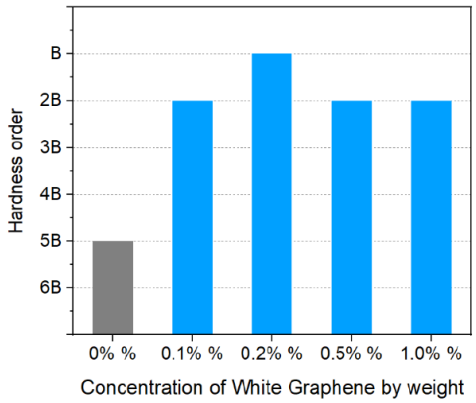
Key findings:

White Graphene (WG) enhances the performance of interior paint at low loadings, as demonstrated using Dulux Interior Paint Wash & Wear +PLUS Anti-Bac Low Sheen Vivid White Paint.

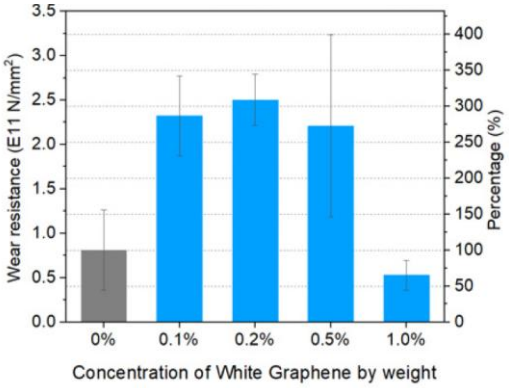
- Wear resistance: +209% (from 0.81 to 2.5×10^{11}N/mm^2)
- Anti-bacterial: +97% (from 141 to 4 colonies)
- Adhesion: +32% (from 3.544MPa to 4.675MPa)
- Stain resistance: +43% (ΔE from 3.36 to 1.93)
- Water resistance: +15%
- Water vapor permeability: −30%



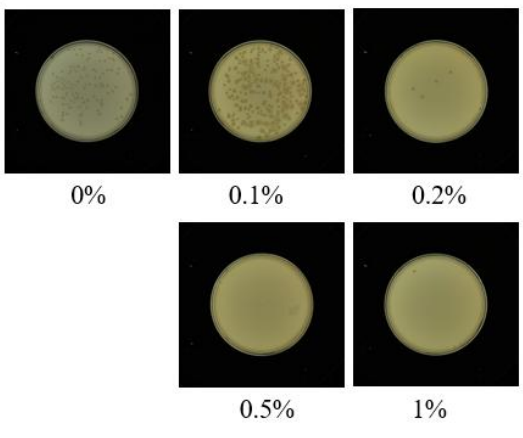
Pencil hardness

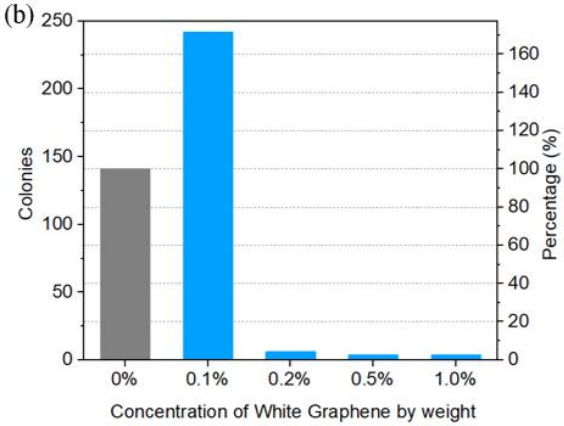


Wear resistance



Anti-baterial



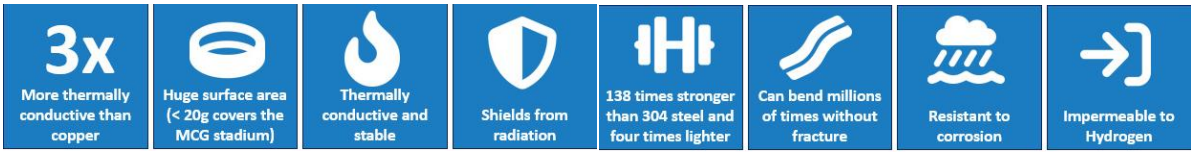


White Graphene

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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