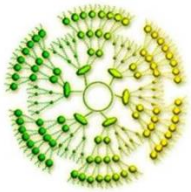

Nanotechnology

Nanotechnology gives us the ability to develop and alter materials at the molecular level. Manufacturing at the atomic level allows chemical engineers to alter the physical characteristics of parent material atom-by-atom to create entirely new substances. Companies are currently manufacturing revolutionary materials like nanoparticles, carbon nanotubes, nano-polymers, nano-glass and nano-ceramic.

All products are produced from some type of raw material. These raw materials are composed of particles which are usually invisible to the naked eye. Conventional materials have particles with sizes varying from 100's of a micron (a millionth or 10-6 of a meter) to millimeters (a thousandth or 10-3 of a meter). A nanomaterial has a particle size of 1 to 100 nanometers, exhibiting unusual physical and electronic properties.

Benefits of Nanomaterials

Some benefits that nanomaterials can bring exceptional lightness, strength, hardness, durability, wear resistance, high chemical activity and even self-cleaning characteristics. Therefore, materials built from nanostructures generate tremendously useful properties for us to explore. Nanometer sized molecules of Nano-Clear® penetrate into the smallest inclusion in painted metal, anodized aluminum, fiberglass, or gelcoat ... protecting them from harsh elements. Nanomaterials within Nano-Clear® Coatings exhibit uncommon characteristics like superior scratch resistance, clarity, UV protection, hydrophobicity and adhesion.

Define a Nanocoating?

It is best to begin defining what a nanocoating is not. Adding nanoparticles to a coating or polymer system will typically improve some physical property including UV ray absorption, improved scratch resistance, anti-bacterial function, odor absorption, hydrophobic or hydrophilic properties... Nanoparticles act as a filler or additive in conventional coating systems. Nanoparticles do not form the polymer structure or change the overall physical properties of a coating system. The physical properties of a coating systems are inherent within the polymer itself. If the coating polymer is inferior, so is the coating system. Adding nanoparticles to an inferior coating polymer will only incrementally improve the system. The key to a superior coating system is to begin with a superior polymer system.

How is Nano-Clear® different?

Nano-Clear® Coatings are manufactured using proprietary 3D nanostructured polymers. These 3D nano-scale networks form the polymer backbone of all Nano-Clear® Coating Systems. Dynamic Mechanical Thermal Analysis (DMTA) is utilized to calculate the "crosslink density" of coating polymers. Nano-Clear® Coatings provide extreme crosslink density as measured using DMTA, including remarkable surface hardness, chemical resistance, extreme UV resistance and high flexibility. Interestingly enough, Nano-Clear® Coatings do not contain any nanoparticles like many marketed coatings. Rather, all Nano-Clear® Coatings rely on polymer crosslink density to exceed automotive OEM and aerospace OEM technical specifications.

Nano-Clear®