

# Lab Safety : Nanoparticles

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- » Many toxicity levels
- » Titanium dioxide, aluminum trioxide, carbon black, cobalt, and nickel
  - » Ultrafine particles (<100 nm), showed greater toxicity than fine particulates (<2.5  $\mu\text{m}$ ) of the same material on a mass basis
  - » 21nm of titanium dioxide produces 43 fold more inflammation in animal lung than 250 nm particles
- » Titanium Dioxide (40nm) is currently being used in sunscreen and cosmetics.
  - » Reduces white chalky appearance in cosmetics
  - » Penetrates hair follicles and sweat glands more than  $\mu\text{m}$  particles
- » Nanoparticles of uncertain toxicity :
  - » Use fume hoods to prevent inhalation
  - » Use gloves to prevent dermal exposure
  - » Use lab coat
  - » Use safety goggles