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Titanium Dioxide the New Asbestos?

Beware of Air Purification Technologies Containing Titanium Dioxide (TiO₂) They Could Cause Cancer in Humans

Asbestos use to be used in many applications including house siding, duct liner and heat shields. Once products containing asbestos had widespread use, the government starting testing asbestos and found it could cause cancer in humans when inhaled; and we all know where those products are today...landfills.. in containers labeled as *biohazard*. Asbestos is old news, but titanium dioxide (TiO₂) has just started appearing heavily in the HVAC market a few years ago.

There are many manufacturers making photocatalytic oxidation technology (PCO) that utilize a combination of an ultraviolet light or quartz cell to produce UV light and a metal or other substrate coated with a minimum of TiO₂ and sometimes other materials as well, to achieve a catalytic reaction that will break down gases and kill pathogens in the air stream. When these devices are located in an air stream treating air being supplied to an occupied space, the potential for inhalation of the TiO₂ particles is possible for the following reasons:

1. UV light energy will eventually break down the binders (glue) holding the TiO₂ to the surface which may include metal, fiber, carbon or fiberglass. The degradation in binder material plus air friction will drive the TiO₂ dust particles into the air stream where they may travel into an occupied space and be inhaled.
2. Some PCO manufacturers provide particle filtration coated with TiO₂. Based on the manufacturer, TiO₂ may be applied to filter media or quartz materials that when changed due to filter loading, will allow fibers to dislodge into the airstream and travel to the occupied space.
3. Service technicians changing filter media coated with TiO₂ should wear the appropriate protective masks.
4. According to the attached 2011 publication by the CDC, much further testing will be required on nano TiO₂ particles. Nano particles are of greater concern because the smaller the particle, the deeper it can lodge into the lungs, where it will permanently reside causing inflammation leading to possible tumors or cancer.

Global Plasma Solutions (GPS) manufactures a variety of patent pending needlepoint cold plasma technologies, none of which contain titanium dioxide (TiO₂). Cold plasma has been used since the early 1930's in Europe and since the late 1960's in the USA. GPS' cold plasma system is safe, effective and economical.