Nano discs pose potential health risk

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(PhysOrg.com) -- A revolutionary material that is used in computer technology could pose health risks to those involved in its manufacture.

Ultra-thin layers of carbon called graphene - heralded for its superconductive properties - could be harmful to the lungs when produced in a particular form.

The flexibility of these disc-shaped particles - known as nanoplatelets - mean they can be readily incorporated into plastic and rubber.

This gives these materials new and useful properties.

The nanoplatelets can also be used to enhance the electronic properties of touch screens.

Nanoplatelets are less than one carbon atom thick and invisible to the naked eye.

Scientists studying nanoplatelets found they behaved like tiny Frisbees, and stay airborne.

Their aerodynamic properties mean that when inhaled the nanoplatelets can find their way deeper into the lungs compared with other forms of graphene.

The particles could accumulate in the lungs and cause damage.

This could potentially affect the health of people involved in manufacturing and handling graphene-based nanoplatelets.

The study, which looked at the aerodynamic and toxic properties of graphene-based nanoplatelets, was published in the journal *ACS Nano*.

"We need to further assess the potential hazards posed by nanoplatelets made of graphene and other other materials, so that appropriate health and safety measures can be put in place for those involved in their manufacture." said Professor Ken Donaldson, Chair of Respiratory Toxicology at the University of Edinburgh.

Provided by University of Edinburgh