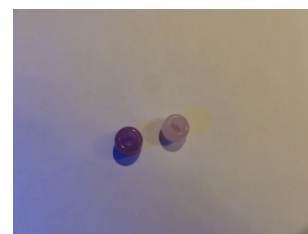
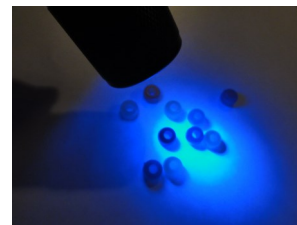


NNCI—Nanoscale Science and Engineering

Exploring Ultraviolet Radiation

Explore!

1. Shine the black light over a UV bead. What happens?
2. Now place the UV bead inside of plastic bag. Select Sunscreen and wipe on the outside with a Q-tip. Shine the black light on the UV beads through the sunscreen. What happens?
3. Place a UV bead inside an amber colored bottle. Shine the black light through the side of the bottle. What happens?
4. Thread a UV bead on a piece of yarn and tie as a bracelet.



UV beads are <https://i.ytimg.com/vi/K5C2ne9irgE/maxresdefault.jpg> the perfect tool for understanding how solar radiation can be harmful. When you expose bare skin to sunlight, your skin will either burn or tan. UV radiation wavelengths are short enough to break chemical bonds in your skin tissue and, with prolonged exposure, your skin may wrinkle or skin cancer may appear.

NNCI—Nanoscale Science and Engineering Exploring Ultraviolet Radiation

Sunscreens and Nanotechnology

Why have sunscreens with inorganic agents been used less?

Particles larger than 150nm scatter visible light
Our eyes see visible scattered light (visible range is 400-700nm)
The scattered light is seen as a white sunscreen



Nanotechnology to the rescue?

Inorganic particles made < 100 nm—do not scatter visible light
Sunscreen will appear clear or translucent



[http://](http://allaboutskenlightening.net/wp-content/uploads/2011/05/dfgffgf.jpg)



www.keys-soap.com/solarrx.html

<http://allaboutskenlightening.net/wp-content/uploads/2011/05/dfgffgf.jpg>

Appearance

With advances come issues of risk. Some fear that the use of nano-sized particles of Ti and Zn pose risks to human health and the environment. Note the Australian ad at the far right stating micro-sized not nanosized.

<http://action.foe.org>



Micronised (Not Nano)

Sunscreen is the most important beauty product you can buy.

And INVISIBLE ZINC® is unlike most other sunscreens. Addressing the risks of deeper penetrating UVA without using chemical absorbers.

INVISIBLE ZINC® Face & Body sunscreen forms an invisible film on the skin that acts as a barrier between you and the environment, reflecting UV light away and helping to neutralise environmental aggressors such as pollution, chemicals and smoke. Highly effective UV protectant that feels like a hydrating moisturiser. Clearly some of the smartest natural protection under the sun.

INVISIBLE ZINC®'s 100% mineral filters create a physical, reflective veil on the surface of the skin and reflect to the ocean's UV rays found in every conventional sunscreen. Zinc Oxide is a natural, mineral reflector of both UVA and harmful deeper penetrating UVA, delivering very high broad spectrum SPF 20+ protection. Your INVISIBLE ZINC® physical surface layer prevents every drop, not just at the beach.

NEW

Best Body Sunscreen Award - a Beauty Award 2009
World's Best New Beauty Product - Cosmetics & Beauty Awards 2009
Winnipeg Beauty Director's Choice Award - Winnipeg Beauty Awards 2007
The Best Sunscreen on the Market - Cosmetics 2008

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