

Nanotechnology 101

Nanotechnology and You

*cited in Natural Resources Defense Council v. U.S. E.P.A.
No. 12-70268 archived on November 15, 2013*

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[Click here to see a fantastic, interactive model showing "The Scale of the Universe."](#)

Just how small is “nano?” In the International System of Units, the prefix "nano" means one-billionth, or 10^{-9} ;

therefore one nanometer is one-billionth of a meter. It's difficult to imagine just how small that is, so here are some examples:

- A sheet of paper is about 100,000 nanometers thick
- A strand of human DNA is 2.5 nanometers in diameter
- There are 25,400,000 nanometers in one inch
- A human hair is approximately 80,000- 100,000 nanometers wide
- A single gold atom is about a third of a nanometer in diameter
- On a comparative scale, if the diameter of a marble was one nanometer, then diameter of the Earth would be about one meter
- One nanometer is about as long as your fingernail grows in one second

The illustration below has three visual examples of the size and the scale of nanotechnology, showing just how small things at the nanoscale actually are.

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The Scale of Things

✿ **What It Is and How It Works**

What is Nanotechnology?

✿ **Size of the Nanoscale**

Seeing at the Nanoscale

[Working at the Nanoscale](#)

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