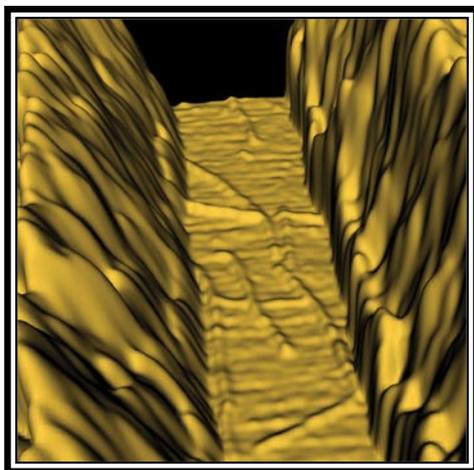


Six Steps for Risk Evaluation and Management

“An early and open examination of the potential risks of a new product or technology is not just good common sense -- it’s good business strategy.”

- Chad Holliday, DuPont Chairman and CEO, and Environmental Defense President Fred Krupp
The Wall Street Journal, June 14, 2005



Single-walled carbon nanotubes between two electrodes

About the Partnership

In June 2005, DuPont CEO Chad Holliday and Environmental Defense President Fred Krupp jointly called for broad collaboration by interested stakeholders to identify and address potential environmental, health, and safety risks of nanotechnology. Soon after, Environmental Defense and DuPont entered into a partnership to develop this risk Framework. The Framework was created by a multidisciplinary team from both organizations, including experts in biochemistry, toxicology, environmental sciences and engineering, medicine, occupational safety and health, environmental law and regulations, product development, and business development.

Download the Framework at
www.NanoRiskFramework.com

Environmental Defense, a leading national nonprofit organization, represents more than 500,000 members. Since 1967, Environmental Defense has linked science, economics, law and innovative private-sector partnerships to create breakthrough solutions to the most serious environmental problems.
www.environmentaldefense.org

DuPont is a science-based products and services company. Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture and food; building and construction; communications; and transportation.

www.dupont.com

Environmental Defense’s work to develop this partnership was supported in part by the Project on Emerging Nanotechnologies, a partnership of The Pew Charitable Trusts and the Woodrow Wilson International Center for Scholars, and by the Bernard F. and Alva Gimbel Foundation.

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ENVIRONMENTAL DEFENSE

finding the ways that work

NANO
Risk Framework

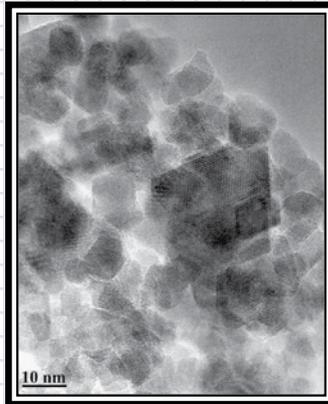
**Environmental Defense – DuPont
Nano Partnership**



The miracles of science™

ABOUT NANOTECHNOLOGY

Nanotechnology is the design of materials at the nano scale such that novel or enhanced properties emerge. These novel properties open the door to innovations in applications including cleaner energy production, energy efficiency, water treatment and environmental remediation. At the same time, these novel properties should be evaluated to determine if they may pose new risks to workers, consumers, the public and the environment.



TEM micrograph showing nanocrystals of iron oxide

Environmental Defense and DuPont believe that both the public and private sectors need to comprehensively address the potential risks of this important new technology.

ABOUT THE NANO RISK FRAMEWORK

For the past two years, Environmental Defense and DuPont have collaborated to develop a comprehensive, user-friendly Framework for evaluating and addressing the environmental, health, and safety risks of nanomaterials across all stages of a product's lifecycle – from initial sourcing through manufacture, use, and recycling or disposal. Our partnership involved an interdisciplinary team that also consulted a wide range of stakeholders and pilot-tested the Framework on several materials and applications. We believe that this Framework is effective, affordable, and amenable to continuing evolution as the field of nanotechnology grows.

Building on the traditional risk-assessment paradigm, the six-step Framework also incorporates several new elements. It delineates “base sets” and additional information elements on properties, hazards and exposure that serve as reference points for evaluating risks and guiding decisions on a material or product.

Early in product development, when little or no information is available on a

Essentially, the Framework is a comprehensive tool to organize, document, and communicate what the user knows about the material; to acknowledge where the information is incomplete; to explain how information gaps were addressed; and to show the rationale behind the user's risk-management decisions and actions.

particular hazard or exposure, the Framework is flexible, providing for the use of “reasonable worst-case assumptions” – or, alternatively, “bridging” to similar materials or processes that have been better characterized. It calls for replacing such assumptions with more data, especially as a product nears commercial launch. The Framework includes an Output Worksheet, which provides a template for organizing and evaluating relevant information and transparently communicating it to stakeholders.



Nanotechnology may enable next generation flat panel displays, as in this research example from DuPont