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.

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

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“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

Six Steps for Risk Evaluation and Management

- Material & Application
- Life Cycle
- Properties & Hazards
- Exposure
- Evaluate Risks
- Assess Risk Mgmt
- Decide, Document & Act
- Review & Adapt

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.

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

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.

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.

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 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.