

DuPont Washington Works

Welcome



MEDIA UPDATE

March 18, 2003

DuPont Washington Works

Paul J. Bossert, Jr.

Washington Works Plant Manager

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- **Overview**
- **Website update**
- **Emissions reduction progress**
- **Assessing the Science**
- **Toxicology, Human Exposure**

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DuPont Core Values

- Commitment to safety, health and environmental stewardship.
- Value and respect for people.
- High degree of ethics in all business practices.

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DuPont's Commitment

- Respond to the public openly, honestly, and accurately.
- Work with state, federal and global regulatory agencies to expand knowledge of C-8 and improve stewardship.
- Further reduce emissions at Washington Works.
- Continue to maintain an operation at Washington Works that is safe for employees, the public and the environment.

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Announcing Updates to the C-8 Information Website (www.c-8inform.com)

- New letter from Plant Manager Paul Bossert
- Emissions Reduction Progress Report
- Current news releases
- Recent letters from regulatory agencies
- The latest employee communications

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Emissions Reduction Progress

	1999	2002	Reduction
Air	31,209	14,480	53.6%
Water	55,597	5,688	89.8%
Total	86,806	20,168	76.8%

** Measurements in pounds*

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Assessing the Science

Dr. Robert W. Rickard

**Director of DuPont Haskell Laboratory for
Health and Environmental Sciences**

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What We Would Like to Clarify

- Laboratory and worker studies assessing health effects of C-8
- Workers and community exposure
- Safeguards to protect human health and the environment

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Health Effects

We are confident that there are no health effects associated with C-8 exposure.

Basis for Confidence:

Hazard Assessment + Exposure Assessment = Risk Assessment

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Analysis of C-8 Health Effects

	Yes	No
Biopersistent	X	
Bioaccumulative		X
Animal Carcinogen	X	
Human Carcinogen		X
Developmental Toxin		X
Reproductive Toxin		X
Genetic Toxin		X

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Assessing the Science

Toxicology

- Extensive database > 200 reports referenced in EPA Hazard Assessment
- Animal studies are designed to cause an effect
 - Is the effect relevant to humans?
 - Is the dose relevant to human exposure?

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Assessing the Science

Is the effect relevant?

- Most sensitive animal model - rat
- Most sensitive effect - liver enlargement
- Do we understand why C-8 causes liver enlargement in rats?
 - Yes - induces peroxisome proliferation
- Is this mechanism relevant to humans?
 - Unlikely

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Society of Toxicology

March 2003

Conclusion: Humans appear to be non-responsive to the adverse effects of peroxisome proliferation

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Assessing the Science

Is the dose (in animal studies) relevant?

Effect (Animal Model)	No Observed Effect Level	Equivalent Human Consumption Gal. of Water with 3 ppb C-8
Chronic-liver (rat and primate)	0.5 mg/kg	>2,000 gal. per day
Cancer (rat)	2.0 mg/kg	>8,000 gal. per day
Reproduction/ Developmental (rat)	10 mg/kg	>40,000 gal. per day

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Doses of Common Chemicals

Chemical	Normal Daily Dose	Lethal Dose	Safety Ratio
Water	1.5 quarts	15 quarts	10X
Sugar	2 ounces	5 pounds	40X
Salt	1/3 ounce	7 ounces	21X
Caffeine	2 Cups of Coffee	75 Cups of Coffee	38X
Aspirin	2 tablets	90 tablets	45X

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Assessing the Science

Human Data

- Extensive database
- Six published studies (1980-2001)
- New study due March 2003
- 3M workers with blood levels up to 100 ppm (maximum)

No health effects identified

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Assessing the Science Human Data

Endpoints Evaluated

Mortality	No effects
Cancer	No effects
Liver Enzymes	No effects
Cholesterol	No effects
Reproductive Hormones	No effects
Growth Hormones	No effects

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Assessing the Science

- C-8 is biopersistent
- Half-life in humans is 4.4 years +/- 3.5 years
- Half-life in animals is days, weeks or months

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Assessing the Science

Exposure Routes

Water
Air
Soil



Kinetics

Absorption
Distribution
Elimination



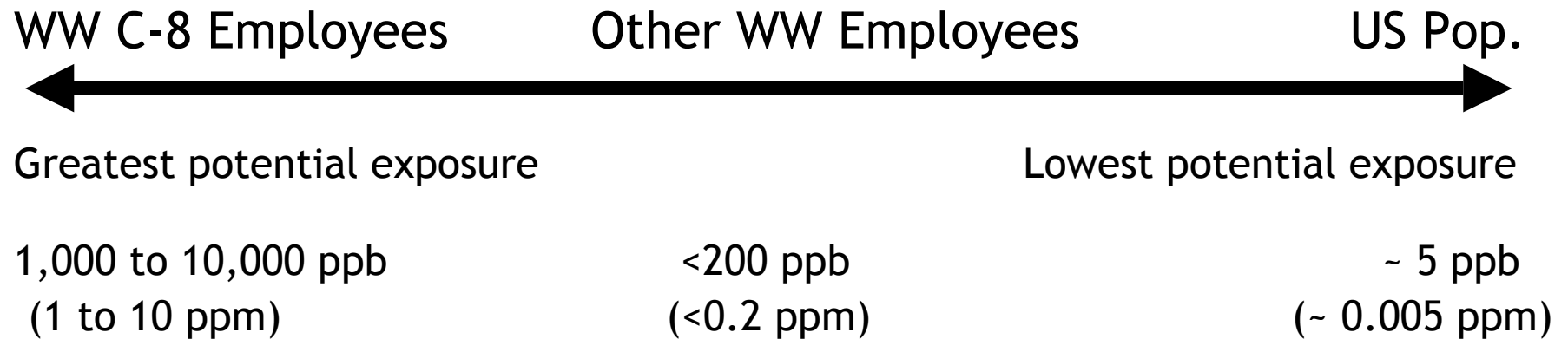
Blood Concentration

Measure/
Model

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Assessing the Science

Average C-8 Blood Concentrations in Humans



Sources: DuPont, 3M

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Assessing the Science

Next Steps

- Complete animal kinetic studies
- Complete blood binding studies
- Continue to evaluate all available data
- Build and validate model if feasible
- Share results with state, federal and global regulatory agencies (ongoing)

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Summary - No Health Effects

Hazard	+	Exposure	=	Risk
Relevance to Man Unlikely	+	Very Low (ppb)	=	Expectation: No Health Effects

Wide Margin of Safety

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Conclusions - Health Effects

- *In more than fifty years of C-8 use by DuPont and others, there are no known adverse health effects in workers associated with C-8*
- *Workers that manufacture and use C-8 have the highest potential for exposure*
- *Community exposure is significantly lower than in the workplace*
- *C-8 is not a human health issue*

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