

# When is it "green"? Preventing the toxic effects of spray foam insulation

*Greg Siwinski, Industrial Hygienist, Occupational Healthy Clinical Centers*

*Jim Vallette, Research Director, Healthy Building Network*

*Dorothy Wigmore, Director of Outreach and Education, Occupational Health Centers*

## ABSTRACT

Spray foam insulation (SPF) is presented as a highly-effective and versatile product that meets high R-value needs for professionals and DIYers alike. Some formulators and contractors call it "green", and Green Seal recently allowed these products in its sustainable insulation certification. Despite this, there are widespread and legitimate concerns about the health effects of its ingredients (particularly isocyanates) and using "green" to describe the products.

Using a life cycle framework, this presentation will bring together information from several perspectives. After reviewing their chemistry, and where and how isocyanates are used in building products, we will review the historical and current ingredients and uses of SPF in buildings. We will present health concerns about these uses raised by fence-line communities, occupational and environmental health studies, fire fighters and fire investigators, and others along the life cycle of this product-- with a focus on the toxic ingredients in SPF. Those concerns include reports from a Syracuse occupational health clinic about the experiences of work crews and building occupants. They will be supplemented by concerns and questions from building scientists, occupational and environmental health agencies and researchers, and other important sources over the years.

Given these concerns, we will recommend theoretical and practical approaches to prevention of adverse health effects throughout the life cycle of building products, including reliable information sources to ascertain the concerns and uncertainty about the use of specific chemicals and products (e.g., the Pharos database) and informed substitution. We will present concrete examples of less toxic substitutions by application for SPF and discuss how a precautionary green chemistry framework meets the goal of sustainable buildings that are healthy and safe for all.

## BIOGRAPHIES

**Greg Siwinski** (MS, CIH) is a certified industrial hygienist with 39 years of experience dealing with occupational and environmental health hazards. Since 1986, he has worked in state programs targeting occupational disease for preventive intervention and has contributed to national efforts to address under-recognized occupational health hazards. He works at the

Occupational Health Clinical Center in the Department of Family Medicine at SUNY Upstate Medical University in Syracuse, NY.

**Jim Vallette** works to understand and explain industry's impacts on people and the planet. His findings have supported major global policy developments (e.g., the Basel Convention ban on toxic waste trade, national and international finance bans on overseas fossil fuel extraction). As Research Director of the Healthy Building Network for the last decade, he helped develop its groundbreaking research about how building materials are made and their impacts on building occupants, construction workers, fence-line communities, and the global environment.

**Dorothy Wigmore (MS)** is an occupational hygienist and ergonomist currently employed as Director of Outreach and Education at the Occupational Health Clinical Centers in Central New York. She has 35+ years of experience in government, unions, NGOs, universities and occupational health organizations in the US and Canada. She integrates policy activities (e.g., around green chemistry, chemical product data sheets) with practical education and prevention efforts.