



# OLR RESEARCH REPORT

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## **ICYNENE® FOAM INSULATION**

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You asked several questions about Icynene® foam insulation. Your questions and answers follow.

This office is not authorized to give legal opinions and this report should not be construed as such.

### ***Are there any studies detailing the dangers of Icynene® foam insulation?***

Icynene® is a registered trade name for a foam insulation product. The product is sprayed or poured into exterior walls, ceilings, floors, attics, crawlspaces and other places to create insulation. As far as we were able to determine, it is legal in every state.

We did an extensive search of the literature and publications by various entities, including the U.S. Environmental Protection Agency (EPA), U.S. Consumer Product Safety Commission (CPSC), Centers for Disease Control (CDC), Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, and state Department of Public Health (DPH), and found no studies on Icynene® specifically. But among the main chemicals in spray polyurethane foam insulation (SPF) and other types of foam insulation, including Icynene®, are isocyanates, which have been documented as posing some health risks to people exposed to them.

Isocyanates, such as methylene diphenyl diisocyanate (MDI), are chemicals that react with other chemicals to form polyurethane. (Polyurethane is found in paints, fabric, adhesives, foam mattresses, packaging material, laminated fabrics, and shoes, among other things, according to OSHA.) While citing the performance benefits of foam insulation, EPA reports that “exposures to isocyanates, and other SPF chemicals in vapors, aerosols, and dust during and after installation can cause asthma, sensitization, lung damage, other respiratory and breathing problems, and skin and eye irritation” ([http://www.epa.gov/dfe/pubs/projects/spf/types\\_of\\_spray\\_polyurethane\\_foam\\_products.html](http://www.epa.gov/dfe/pubs/projects/spf/types_of_spray_polyurethane_foam_products.html)). According to CDC, “isocyanates are powerful irritants to the mucous membranes of the eyes and gastrointestinal and respiratory tracts. Direct skin contact can also cause marked inflammation. Isocyanates can also sensitize workers, making them subject to severe asthma attacks if they are exposed again” (<http://www.cdc.gov/niosh/topics/isocyanates/>).

According to DPH, “isocyanates exposure to household occupants is probably negligible. This is because once the foam is fully cured, isocyanates are not very volatile and do not linger in the air” (DPH Environmental Health Technical Brief, *Spray Polyurethane Foam Insulation*). Similarly, EPA states that “spray foam that is correctly applied and allowed to fully cure is typically considered relatively inert” and no longer presents a danger ([http://www.epa.gov/dfe/pubs/projects/spf/quick\\_safety\\_tips.html](http://www.epa.gov/dfe/pubs/projects/spf/quick_safety_tips.html)). But curing times vary. More general research and product specific studies are clearly needed, according to EPA.

### ***What steps are being taken to regulate Icynene® foam insulation?***

There appears to be general agreement that exposure to isocyanates should be minimized because of potential health hazards (see for example, [NIOSH Alert, Preventing Asthma and Death from MDI Exposure during Truck Bed Liner and Related Applications](#)). On April 13, 2011, EPA released action plans to address the potential health risks of MDI, one of the major isocyanates used in SPF and other foam insulation products. According to EPA, worker exposures to isocyanates are already subject to protective controls in occupational settings. But EPA said the agency was concerned about potential harm to consumers or self-employed workers using products containing uncured MDI and its related polyisocyanates (e.g., spray-applied foam sealants, adhesives, and coatings) or incidental exposures to the general population while such products are used in or around buildings, including schools and homes. ([Read more](#) on the action plans here.)

The industry, states, and EPA and other federal agencies have made several recommendations to address risks posed by exposure to isocyanates. Among other things, they recommend that:

1. workers should review label and foam installation product information for ingredients, hazards, directions, safe work practices, and precautions;
2. workers should receive appropriate health and safety training;
3. only workers following safe work practices and wearing appropriate personal protective equipment should be present during application of SPF and other foam products; and
4. workers should exercise caution and follow a manufacturer's recommendations when determining a treated building safe for unprotected workers.

***What recourse is available to anyone who was harmed by Icynene®?***

The recourse available to anyone alleging to have been harmed by a product depends on the facts of the case, including the nature and circumstances of the injury.

Generally, product sellers are liable for any injury or damage caused by the proper use of their products or their failure to provide warnings. A "product seller" is an entity or person, including a manufacturer, wholesaler, distributor, or retailer engaged in the business of selling products for resale or consumption ([CGS § 52-572m](#)). A product seller may be subject to liability for harm caused to a claimant who proves by a fair preponderance of the evidence that the product was defective in that adequate warnings or instructions were not provided ([CGS § 52-572q](#)). A product seller is not liable for harm that would not have occurred but for the fact that the product was altered or modified by a third party unless the alteration or modification was (1) in accordance with the product seller's instructions or specifications, (2) made with the product seller's consent, or (3) the result of conduct that reasonably should have been anticipated by the product seller ([CGS § 52-572p](#)). Your constituent's best recourse is to consult a practicing attorney.

Several state and federal agencies also respond to consumer safety issues. These include the CPSC (dangerous or hazardous substances), OSHA (workplace violations), and state Department of Consumer Protection (misleading advertising).

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