



June 6, 2017

Submitted online via CalSAFER

### **Comments on the Listing of Spray Polyurethane Foam (SPF) Systems With Unreacted Methylene Diphenyl Diisocyanates (MDI) as a Priority Product**

We appreciate this opportunity to submit comments on behalf of the Natural Resources Defense Council (NRDC), Communications Workers of America (CWA), Californians for a Healthy And Green Economy (CHANGE), Center for Environmental Health (CEH), Environmental Working Group (EWG) and Worksafe. We have no financial interest in any of the chemicals or products that may be affected by the subject matter of these comments.

NRDC is a non-profit organization with over 2.8 million members and activists, 400,000 of whom are Californians. CWA represents 700,000 workers in private and public sector employment in the United States, Canada and Puerto Rico. CHANGE is a broad-based coalition of 38 environmental and environmental justice groups, health organizations, labor advocates, community based groups, parent organizations, and others working to change chemical policies for the protection of workers, children, public health, the environment, and the economy. CEH protects people from toxic chemicals by working with communities, consumers, workers, government, and the private sector to demand and support business practices that are safe for public health and the environment. EWG is a non-profit, research and advocacy organization with more than 2.4 million followers, including 300,000 Californians. Worksafe is a California-based organization dedicated to eliminating all types of workplace hazards.

We are in strong support of the listing of SPF systems containing MDI as a Priority Product. SPF systems containing MDI meet the Key Prioritization Principles for Product-Chemical Identification listed in the Safer Consumer Products Regulations: (1) There is potential for public exposure to the Candidate Chemical in the product and (2) There is potential for one or more exposures to contribute to or cause significant or widespread adverse impacts.<sup>1</sup> The Department's Initial Statement of Reasons<sup>2</sup> and Summary of Technical Information and Scientific Conclusions<sup>3</sup> clearly demonstrate both the potential for worker and consumer exposure to MDI from SPF, and the potential for exposure to cause significant adverse impacts, including serious, irreversible and life-altering diseases like asthma, sensitization and reactive airway dysfunction syndrome.

The Safer Consumer Products Program has the potential to deliver better health for all California families by reducing toxic chemicals in products in favor of safer alternatives. To realize this vision, the

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<sup>1</sup> California Code of Regulations, Division 4.5, Title 22, Chapter 55, Section 69503.2

<sup>2</sup> CA DTSC. (March 2017) Initial Statement of Reasons: Safer Consumer Products Regulations—Listing Spray Polyurethane Foams Systems with Unreacted Methylene Diphenyl Diisocyanates as a Priority Product.

<sup>3</sup> CA DTSC (Feb 2017) Summary of Technical Information and Scientific Conclusions for Designating Spray Polyurethane Foam Systems with Unreacted Methylene Diphenyl Diisocyanates as a Priority Product.

Department must follow the science and move forward in a timely manner, as every delay means protections denied for workers, consumers and others vulnerable to toxic exposures from products.

Our comments are summarized here with more detail provided below.

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### DETAILED COMMENTS

#### **1. The Department has appropriately proposed that all MDI-containing SPF systems with the potential for exposure and significant adverse impacts are part of the Priority Product listing.**

The process to identify Priority Products is laid out in the Safer Consumer Products regulations.<sup>4</sup> The regulations state that the Department’s listing shall be based on the Key Prioritization Principles, and the potential exposures and adverse impacts. The Department has appropriately considered the factors outlined in 22 CCR § 69503.3(a) and (b) and based its decision on at least one of the factors in each subsection.<sup>5</sup> Because all two-component SPF systems containing unreacted MDI result in airborne concentrations of MDI when applied, and the hazards of MDI are well-established, all these systems have the potential for exposure and adverse impacts, as the cases discussed below demonstrate further. Therefore, the Department is correctly proposing to name all these SPF systems as Priority Products.

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<sup>4</sup> California Code of Regulations, Division 4.5, Title 22, Chapter 55, Section 69503.2

<sup>5</sup> See, for example, CA DTSC (Feb 2017) Summary of Technical Information and Scientific Conclusions for Designating Spray Polyurethane Foam Systems with Unreacted Methylene Diphenyl Diisocyanates as a Priority Product, at 10, 15-18 (identifying hazard traits and toxicological endpoints for workers and others based on scientific findings of expert agencies) and 14-15 (identifying the market presence of the product and the occurrence of exposures and potential exposures to the Candidate Chemical in the product). The consideration of expert scientific findings also satisfies the requirements of 22 CCR § 69503.2(b)(1)(C).

## **2. Cases of worker illness and injury associated with SPF systems containing isocyanates illustrate the potential for significant adverse impacts.**

Despite industry safety and training programs, engineering/ administrative controls and personal protective equipment (PPE) requirements, workers continue to be harmed by SPF systems containing isocyanates. Such controls may fail or not be adequate, such as improperly fitting PPE.

Appendix A to these comments are case summaries from the states of Washington, Michigan and Massachusetts. Far from being unusual circumstances, these cases show a consistent pattern of respiratory disease caused by MDI from spray foam for workers in the construction industry, whether they are applicators or simply working in the vicinity of an application. Further, these cases are just the tip of the iceberg. Work-related asthma is significantly under-reported by workers and health care providers.<sup>6</sup>

The cases also show how disease can devastate a worker's life—many workers who developed respiratory disease after MDI exposure became unable to work at construction jobs. Isocyanate sensitization can occur from just one exposure, and there is no safe exposure level for sensitized individuals.<sup>7</sup> In the reported cases, workers were often fired or forced to leave their jobs. This is consistent with the general findings on work-related asthma from the California Department of Public Health.<sup>8</sup>

## **3. Cases of consumer illness and injury associated with SPF systems containing isocyanates illustrate the potential for significant adverse impacts.**

Appendix C to these comments are case summaries from Washington state, peer-reviewed journal articles and incident reports from the Consumer Product Safety Commission. Again, these cases illustrate a consistent pattern of consumers put in harm's way by isocyanates in SPF systems during and after installation.

These incidents seriously impacted these consumer's lives, in many cases forcing them to leave their homes permanently or damaging their health so severely that they required numerous medical visits and what is likely lifelong symptom management.

## **4. Requirements of Occupational Safety and Health Administration (OSHA) agencies do not mandate substitution and are not adequate to address the potential exposures and adverse impacts considered by the Department.**

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<sup>6</sup> Lefkowitz D, Pechter E, Fitzsimmons K et al. Isocyanates and Work-Related Asthma: Findings From California, Massachusetts, Michigan and New Jersey, 1993-2008. *American Journal of Industrial Medicine* 58: 1138-1149 (2015).

<sup>7</sup> US EPA (2017) Health Concerns About Polyurethane Spray Foam. <https://www.epa.gov/saferchoice/health-concerns-about-spray-polyurethane-foam>

<sup>8</sup> Milet M, Lutzker L, & Flattery J (2013) Asthma in California: A Surveillance Report. Richmond, CA: California Department of Public Health, Environmental Health Investigations Branch, available at [www.cdph.ca.gov/programs/ohsep/Documents/Asthma\\_in\\_California2013.pdf](http://www.cdph.ca.gov/programs/ohsep/Documents/Asthma_in_California2013.pdf).

The Department has identified chemicals that may impact workers, such as MDI in SPF systems, as a policy priority.<sup>9</sup> It is important to note that OSHA agencies (such as Cal/OSHA and federal OSHA) do NOT require substitution of hazards or much primary prevention. They primarily use permissible exposure limits (note the word “permissible”) or PELs, work practices and protective equipment to “control” hazards.

However, these “controls” do not get rid of the hazards identified by the Department. They require people to give and get the right training and equipment, suppliers being transparent about the hazards in their products, and employers doing the right thing all the time (e.g., providing equipment, maintaining ventilation systems). We know this does not happen in real life, as the cases attached to these comments grimly illustrate and as the documented exposures and adverse effects identified by the department also show.<sup>10</sup> These examples demonstrate that other regulatory programs do not provide adequate protection against the potential adverse impacts and exposure pathways being considered by the Department, addressing the requirement of 22 CCR § 69503.2(b)(2).

Though California has its own standards for chemicals, and for most isocyanates the Cal/OSHA PELs are more up-to-date and/or inclusive, like all occupational exposure limits, these PELs:

- often are not consistent with current scientific knowledge or listings by authoritative sources (e.g., IARC, NTP);
- are not health-based, as they reflect compromises about what is “reasonably practicable”, politically acceptable, and/or negotiated;
- list an eight-hour average, short-term limit or ceiling limit for air concentrations, usually ignoring other routes of entry; and
- say nothing about appropriate less toxic substitutes.

Dr. David Michaels, assistant secretary of labor for occupational safety and health (i.e., the head of federal OSHA), said,

*We know that the most efficient and effective way to protect workers from hazardous chemicals is by eliminating or replacing those chemicals with safer alternatives whenever possible.*<sup>11</sup>

Green chemistry is about the inherent properties and hazards of chemicals. It is not about expecting workers or consumers to wear (often) ill-fitting and inappropriate protective gear that is woefully inadequate to protect them from avoidable hazards. It is not about using ventilation to dilute hazardous vapors, dusts or fumes. The accurate and effective use of green chemistry is to identify and eliminate hazards before they have a chance to affect people or their environments. That is what public health, and its occupational health and safety component in particular, are really about too.

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<sup>9</sup> CA DTSC (2015) Priority Product Work Plan: Three Year Work Plan 2015-2017

<sup>10</sup> See, for example, CA DTSC (Feb 2017) Summary of Technical Information and Scientific Conclusions for Designating Spray Polyurethane Foam Systems with Unreacted Methylene Diphenyl Diisocyanates as a Priority Product, at 16-17 (referencing cases of asthma and death associated with MDI exposure).

<sup>11</sup> US Department of Labor (2013) *OSHA releases new resources to better protect workers from hazardous chemicals*, OSHA Statement: 13-2026-NAT, available at [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=NEWS\\_RELEASES&p\\_id=24990](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=24990).

People don't ask for the hazards they face at work, in their homes, or in their environments. Workers don't choose what they work with or how. As the World Health Organization says, "occupational exposures are avoidable hazards to which individuals are involuntarily exposed."<sup>12</sup>

Substitution with less toxic chemicals or processes is the most effective prevention tool, which is why the Safer Consumer Products regulations prefer alternatives that provide inherent protection over those that rely on controls.<sup>13</sup>

## **5. Buildings can and should be both energy-efficient and healthy. The Safer Consumer Products process promotes the development of insulation products that do not contain potent hazardous chemicals.**

The Department's current proposal to list SPF systems with MDI as a Priority Product is the first step on the path to safer, healthier insulation products. The Priority Product listing will not change or restrict the use of SPF for any application in California.

After the listing, manufacturers will need to consider safer alternatives to MDI in SPF systems. True to California's spirit of innovation, there is already excellent research and development work on non-isocyanate polyurethane systems underway in the Bay Area.<sup>14</sup> The Safer Consumer Products process can further incentivize and promote this type of green chemistry work, with the ultimate goal of insulation products without isocyanates or other toxic chemicals becoming the norm.

We encourage existing manufacturers, installation companies, and related trade groups who still use isocyanate formulations to contact Green Chemistry laboratories like the Warner Babcock Institute and others, to get an estimate of the timeframe and cost for delivery of a scalable, commercially viable, and benign alternative to the current toxic formula. Appendix B to these comments is the standard Warner Babcock Institute Invention Program Schedule. Additionally, we encourage the formation of a new consortium of industry stakeholders to share the modest cost of contracting a Green Chemistry lab to develop non-hazardous alternatives and to work together to implement a rapid commercial rollout of the final product.

MDI in SPF systems is not the first instance of a toxic chemical in building insulation. In the past, formaldehyde binders were commonplace in fiberglass insulation, but manufacturers phased out these toxic binders completely in favor of safer alternatives.<sup>15</sup> The result? Huge drops in formaldehyde releases from factories, and we would expect significant exposure reductions from new insulation in consumer's homes as well. This example illustrates the power, feasibility and significant public benefits that can be achieved with the safer substitution approach, with the end result of making buildings both

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<sup>12</sup> World Health Organization (2011) *Primary prevention of cancer through mitigation of environmental and occupational determinants*, available at:

[http://www.who.int/phe/news/events/international\\_conference/Background\\_interventions.pdf](http://www.who.int/phe/news/events/international_conference/Background_interventions.pdf).

<sup>13</sup> California Code of Regulations, Division 4.5, Title 22, Chapter 55, Section 69506


<sup>14</sup> Presidential Green Chemistry Challenge: 2015 Designing Greener Chemicals Award. Hybrid Non-Isocyanate Polyurethane/Green Polyurethane. <https://www.epa.gov/greenchemistry/presidential-green-chemistry-challenge-2015-designing-greener-chemicals-award>

<sup>15</sup> Healthy Building Network. (2015) Residential Fiberglass Insulation Transformed: Formaldehyde is No More. <https://healthybuilding.net/news/2015/10/30/residential-fiberglass-insulation-transformed-formaldehyde-is-no-more>

energy efficient and healthier.

Thank you for your consideration of these comments. Please feel free to contact us with any questions.

Respectfully submitted,



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## 6. APPENDIX A: Cases of worker illness and injury from SPF systems containing isocyanates

### Washington<sup>16</sup>

#### Professional foam insulator needs emergency help

In 2007 a male laborer, age 36, worked for an insulation company that installed MDI-based spray polyurethane foam in residential attics. His job duties were to mask, cut over-sprayed foam, clean up, and tend the hose used by the lead applicator. During his 3 months of employment he sustained two different severe episodes of shortness of breath requiring emergency medical treatment. At the time of the first episode he was wearing a dust mask, at the second episode he was equipped with an air purifying respirator. He was diagnosed with occupational asthma (Reactive Airways Dysfunction Syndrome) and advised to leave his job, which he did.

### Michigan<sup>17</sup>

CASE 1: A male in his 40s worked for 3 years as an insulation foam sprayer. His asthma began within one month of starting this job. There was an incident where some of the foam got into his mask when he was trying to empty a canister. He immediately experienced shortness of breath, wheezing and chest tightness. He sought treatment and was prescribed Albuterol, Prednisone and Dulera. He typically wore a spray suit, mask with organic filter, gloves and a head sock. Although he continued to have breathing symptoms, he quit taking his asthma medication due to its cost. A MIOSHA inspection revealed multiple violations including hazard communication and respiratory protection. Air monitoring for MDI was below the ceiling limit.

CASE 2: A male in his 30s worked for 10 years as a home foam insulation installer. When he first began working for the company no personal protection equipment was provided. He developed shortness of breath, chest tightness and a cough immediately after a spill. He had one trip to the Emergency Department. He was diagnosed with asthma and prescribed an inhaler 2 years after his symptoms began. He asked his boss about applying for workers' compensation for his asthma, but his boss told him he would be denied compensation because he smoked cigarettes, so he did not apply. Eventually the company provided gloves, a respirator and a body suit.

CASE 3: A male in his 20s was a spray gun installer at a foam insulation company. He experienced a cough, wheezing, chest tightness and shortness of breath 7 months after starting this job. He had one Emergency Department visit. He was diagnosed with asthma and prescribed Albuterol and Prednisone 9 months later. He wore a full face respirator, a body suit and gloves. He was reassigned to a different job at the same company after his asthma began.

CASE 4: A male in his 30s worked as a spray foam insulation operator. He developed asthma and was prescribed Serevent and Prednisone. He was fired after he developed asthma.

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<sup>16</sup> Washington State Occupational Respiratory Disease Program. Isocyanate-based foam and work-related asthma. [http://www.ini.wa.gov/safety/research/files/42\\_03\\_2017\\_isocyanate\\_foam.pdf](http://www.ini.wa.gov/safety/research/files/42_03_2017_isocyanate_foam.pdf)

<sup>17</sup> Michigan State University. (2017) Prevent work related asthma from isocyanate exposure in SPF- Spray Polyurethane Foam applications for insulation in the construction industry. [http://www.oem.msu.edu/userfiles/file/HAZ%20ALERTS\\_WRASprayPolyurethaneFoam.pdf](http://www.oem.msu.edu/userfiles/file/HAZ%20ALERTS_WRASprayPolyurethaneFoam.pdf)

## **Massachusetts<sup>18</sup>**

### Case of Chemical pneumonitis secondary to inhalation from Icynene foam

37 year old male nonsmoker with no prior history of asthma and who worked as a construction estimator for the Insulation industry (NAICS 28310) presented with feeling of windpipe closing. He described being in the basement measuring fiberglass while spray foam was being applied upstairs. He was taken to the Emergency Room and for a “lung collapse” and was hospitalized for 6-7 days. He did not know of any other workers with similar symptoms and had not received any health and safety training regarding the hazards at work. He feared retaliation and job loss.

OSHA issued two serious violations 29 CFR 1910.134 E01 (respiratory protection--need to provide medical evaluation to determine employee's ability to wear a respirator) and HazCom 29 CFR 1910.1200 H01. The total fine was \$2800

### Work-related asthma from inhalation of MDI

56 year old male with a 40 pack year smoking history worked as an operations manager for small insulation company with one owner and 3 employees (NAICS 238310). His job included spraying foam and supervising the application of spray foam. He identified transferring chemicals day to day as a hazardous task and was told to stop working and avoid spray foam by his occupational medicine physician. He and his coworkers had breathing symptoms. He reported using respiratory protection. He did not have any Emergency Department visits or hospitalizations. He was fired.

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<sup>18</sup> Massachusetts State Surveillance Data. Received from Elise Pechter Industrial Hygienist at Massachusetts Department of Public Health on May 12, 2016.



## 7. APPENDIX B: Warner Babcock Institute Standard 3-Phase Invention Program

**Phase 1 – Parameterization:** WBI receives a minimum amount of information from the client and some standard materials and test procedures to 1) map structure – function relationships, 2) deliver novel, intuitive solution models, and 3) evaluate feasibility of some early-stage targets.

**Timeline:**

4 months (variable as a function of resource allocation and project scope)

**Deliverables:**

- structure – function landscape
- new solution models and feasibility demonstration
- written report providing the basis of a provisional patent application

**Decision:**

- monthly project reviews
- go / no-go for Stage 2 at end of final month of Stage 1

**Phase 2 – Integration:** Having developed new solution models and preliminary leads, WBI and the client jointly review the results of Stage 1 to define the Stage 2 program plan for a full exploration of performance characteristics and solid lead generation to enable a full patent filing.

**Timeline:**

4 months (variable as a function of resource allocation and project scope)

**Deliverables:**

- solid prototype leads meeting key lab performance criteria
- written report providing the basis for a full patent application

**Decision:**

- monthly project reviews
- go / no-go for Stage 3 at end of final month of Stage 2

**Phase 3 – Optimization:** Working in collaboration, WBI will engage in further product and process optimization to enable scale-up and further strengthen the IP position of the new technology.

**Timeline:**

4 months (variable as a function of resource allocation and project scope)

**Deliverables:**

- de-risked prototypes advanced to pilot testing and other advanced field/plant testing

## 8. APPENDIX C: Cases of consumer illness and injury from SPF systems containing isocyanates

### Washington<sup>19</sup>

#### Office workers get sick after re-entering a building insulated with spray foam

In 2014 six office workers suffered occupational asthma following the application of spray can foam insulation. An additional 2 workers reported respiratory symptoms. Workers continued to experience problems with their breathing for at least 6 months after the application. Two maintenance workers applied approximately 7 spray cans of Great Stuff Pro—Gaps & Cracks Insulating Foam Sealant (30% diphenylmethane diisocyanate) over 3 days during business hours. The insulation was applied to interior gaps to restore the building following a recurring wasp infestation.

Maintenance workers wore respiratory and other personal protection during product application and did not suffer breathing problems. Upon building re-entry however, one office worker experienced health symptoms within the first week and was subsequently diagnosed with new-onset occupational asthma. The five remaining workers' compensation claims were accepted. Ultimately, all injured workers were accommodated through permanent relocation to a separate building. The employer experienced approximately 70 lost work days, and \$2,100 in OSHA fines. The cumulative workers' compensation costs exceeded \$200,000.

### Published journal articles

Tsuang, Wayne and Yuh-Chin T. Huang. Asthma Induced by Exposure to Spray Polyurethane Foam Insulation in a Residential Home. JOEM, Vol. 54 Number 3. March 2012

36 year old male and 38 year old female living in the same building presented with cough and dyspnea. 18 months before they had moved into a home and had SPF installed in the attic. They evacuated the building for 4 hours during installation; however upon arriving back they noticed a strong odor developed a cough, dyspnea, dizziness, headache and watery eyes. SPF used contained polymeric diphenylmethane diisocyanate (MDI). Both patients were diagnosed with asthma or reactive airway dysfunction syndrome due to exposure to isocyanates and treated with inhalers and steroids. They moved out of the home.

Huang YT and Tsuang W. Health effects associated with faulty application of spray polyurethane foam in residential homes. Environmental Research 134 (2014) 295-300.

Another study focused on 13 people from 10 households (ages 33-82) whose homes were retrofitted with spray polyurethane foam. All of the individuals reported smelling unpleasant odors. 11 of them developed acute watery and burning eyes, burning nose, sinus congestion, throat irritation, cough, dyspnea and chest tightness. 12 reported acute neuropsychiatric symptoms such as headache, dizziness, poor memory, difficulty concentrating, photosensitivity, myalgia and insomnia. 3 reported gastrointestinal symptoms of nausea, vomiting and cramping. 3 had skin rashes. 7 had methacholine challenge testing and one was positive. They had persistent and recurring symptoms even after spray foam application was completed.

### Consumer Product Safety Commission (CPSC) incident reports<sup>20</sup>

Fourteen incident reports follow.

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<sup>19</sup> Washington State Occupational Respiratory Disease Program. Isocyanate-based foam and work-related asthma. [http://www.ini.wa.gov/safety/research/files/42\\_03\\_2017\\_isocyanate\\_foam.pdf](http://www.ini.wa.gov/safety/research/files/42_03_2017_isocyanate_foam.pdf)

<sup>20</sup> From <https://www.saferproducts.gov/Default.aspx>

### Report Details

Report No: 20170322-EAE41-2147404985

Report Publication Date: 4/27/2017

Report Date: 3/22/2017

Category of Submitter: Consumer

Sent to Manufacturer/Importer/

Private Labeler: 4/6/2017

### Product Details

Product Description: Injection Foam Insulation

Serial Number: ?

Product Category: Home Maintenance and Structures

UPC Code: ?

Product Type: Building Materials & Home Structures

Date Manufactured: 1/13/2017

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer Date Code: ?

Manufacturer / Importer / Private Labeler Name: TRIPOLYMER, INC.

Retailer: The Insulation Guys

Brand Name: Tripolymer®

Retailer State: Michigan

Model Name or Number: ?

Purchase Date: 1/13/2017

### Incident Details

Incident Description:

On January 13, 2017, I had The Insulation Guys, 24634 five-mile rd., suite 32, Redford, MI 48239 Install Tripolymer spray foam insulation in my exterior Walls of my House. I asked the salesman if I should leave the home during installation? He said no. they installed it, I stayed the night, the very next morning when I got up I felt so sick, Throat burning, chest Hurting, eyes burning. I had to get out of the house. The Symptoms persisted for days. Went to Family Doctor. had Blood test, Pulmonary function test, they recommended me to see an allergy Doctor. I have not had any known allergies up to now. I contacted an Environmental Lawyer who told me my lungs were Burned by the 'Off gassing' during the chemical reaction during curing, He later dropped my case because he said it was to difficult to prove and not enough money to be made.

I have moved out of the house for two months and had to come back for financial reasons, I am Living in the addition of the back of house which was not insulated. The Symptoms persist but not as severe.

PS; Do not ever stay in a house that is to be insulated by spray foam!

Incident Date: 1/13/2017

Incident Location: Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury, Seen by Medical Professional

Gender: Male

My Relationship to the Victim: Self

Victim's Age When Incident Occurred: 62 years

### Additional Details

Submitter has product? Yes

If yes to any, explanation: The product is in the walls

Product was damaged before incident? N/A

Have you contacted the manufacturer? N/A

Product was modified before incident? N/A

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall

### Report Details

Report No: 20120301-B87DF-2147469709

Report Publication Date: 3/23/2012

Report Date: 3/1/2012

Category of Submitter: Consumer

Sent to Manufacturer/Importer/

Private Labeler: 3/9/2012

### Product Details

Product Description: Icynene closed cell spray foam insulation

Serial Number:

Product Category: Home Maintenance and Structures

UPC Code:

Product Type: Building Materials & Home Structures

Date Manufactured:

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer Date Code:

Manufacturer / Importer / Private Labeler Name: ICYNENE INC

Retailer: Buildwithfoam.com by Closed Cell Structures, LLC

Brand Name: Icynene spray foam insulation

Retailer State: Unspecified

Model Name or Number: Icynene MD-R-200 Insulating Spray

Purchase Date:

Foam

### Incident Details

Incident Description:

Beginning in October 2010 through May 2011, I rented a cottage which had been newly winterized by the landlord prior to my moving in. The landlord, acting as the contractor, hired a company to install Icynene closed cell polyurethane spray foam insulation. As a member of the unsuspecting public, after a short time I started developing headaches, a runny nose, acid reflux and then allergic-like reactions to food. This was followed by respiratory and gastrointestinal problems, which went unexplained for over eight months, despite blood tests, chest x-rays, CT scans, and the like. Eventually, I was diagnosed with a serious inflammatory gastrointestinal condition and a respiratory condition, specifically hyper-reactive airways (which my MD refers to as "isocyanate asthma") During my occupancy, I had noticed an ammonia type of musty smell at times, especially along the stairwell leading to the 2nd floor. By the spring of May 2011 with the windows closed, after three days of heavy rain and then heat, a very strong odor of ammonia, polyurethane type paint, and other noxious smells pervaded the cottage interior. I vacated immediately. The suspicious odors were confirmed by five different friends/neighbors and the cause of my health problems became clear. From the time I moved into the cottage to present, I have had over 60 medical appts. Although my respiratory symptoms have improved since vacating, I continue to cope with substantial health problems, including acute sensitization and autonomic nervous system dysfunction from this chemical exposure. I was always healthy before moving into the cottage, never realizing spray foam insulation under floors, in walls and the roofline of a small building could off gas disocyanates, amine catalysts, ammonia by-products and other chemicals. No ventilation had been installed. I was informed by three highly respected medical professionals in Boston-a research physician at Brigham & Women's Hospital, an occupational health clinic physician and instructor at Harvard School of Public Health, and a pulmonologist affiliated with the Beth Israel Deaconess Hospital- that spray foam insulation poses significant health risks, as it is often not mixed properly, not applied properly, does not cure properly in the wall, and often is not properly ventilated. One of the physicians stated "even if Icynene works perfectly, it sometimes does not cure properly and can off gas." Each of these medical professionals knew about the deleterious effects of this product, including respiratory effects and cases of "isocyanate" asthma.

Also of note, many of the protocols established for the product application- certification of applicator, ventilation required for safety and adequate air exchanges, checking of R values for building inspection and occupancy permit- were not properly followed in this case.

This product should not be on the market- without adequate knowledge of its effects on human health and/or any established scientific methods to test air for isocyanates or the human body for metabolites. I have major concerns about the widespread use of this product and believe it poses a significant public health risk. Action must be taken.

Incident Date 5/24/2011

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Hospital Admission  
My Relationship to the Victim: Self

Gender: Female

Victim's Age When Incident Occurred: 52 years

### Additional Details

Submitter has product? N/A

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: I contacted the manufacturer  
anonymously to inquire about necessary parameters to consider

when using Icynene closed cell spray foam throughout a small  
home, and also inquired about proper product application and  
ventilation requirements.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall



Report  
An Unsafe Product

Business  
Register & Respond

Search  
Recalls & Reports

About

Questions

### Report Details

Report No: 20120214-460D8-2147470202

Report Date: 2/22/2012

Sent to Manufacturer/Importer/

Private Labeler: 2/29/2012

Report Publication Date: 3/14/2012

Category of Submitter: Consumer

### Product Details

Product Description: spray foam used for insulation in buildings/homes

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name: ICYNENE INC

Brand Name: Icynene

Model Name or Number: Icynene LD-C-50

Serial Number:

UPC Code:

Date Manufactured:

Manufacturer Date Code:

Retailer: HBS Foam Insulation

Retailer State: South Carolina

Purchase Date: 12/22/2009

### Incident Details

Incident Description:

In December 2009, I had Icynene spray foam insulation installed in a home under construction. I had worked in this house for nine months without any kind of health issues. After working in the house on four different occasions in the first week that the foam was sprayed, I was in the emergency room in a local hospital with severe chest pains. I was checked for heart problems but had no problem there. I told the doctor that I had been in this house and smell of the foam was quite strong. She said that maybe I had a chemical burn. This product was advertised as being inert and did not off-gas. Icynene finally had a company do an air sample in May of 2010 and the VOC's were almost eleven times the allowable amount for new construction yet the company said that the VOC's were coming from some other source. There was nothing else in the house except the sub-floor that was not covered by their foam insulation. Like I said, I had been in the house almost daily for nine months doing electrical and assorted construction work without a problem until the insulation was installed in the building. Other people that had been in the house several times earlier also had problems. The house is still sitting as it was the day the foam was sprayed in it in 2009. Each time that I have gone into the house since for just a short time, I have had to go to a doctor. I had an analysis done on the product and it was still showing isocyanate, one of the sensitizing agents, still present seven weeks after the product was sprayed. The company says that the product is supposed to be safe within twenty-four hours. The last time that I contacted the company, Icynene Inc., about my problems, the engineer, [REDACTED], hung up the phone on me. I have tried to get the installer to see if he could take the product out of the building but he too is of no help.

The EPA is looking at isocyanate related problems a little closer now. Anyone can go to <http://epa.gov/pbt/> and look at Methylene Diphenyl Diisocyanate (MDI) and Related Compounds Action Plan [RIN 2070-ZA15] for more information.

Incident Date 12/22/2009

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Emergency Department

Treatment Received

My Relationship to the Victim: Self

Gender: Male

Victim's Age When Incident Occurred: 65 years

### Additional Details

Submitter has product? N/A

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: The foam is still in the house and I have contacted the manufacturer several times.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall



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### Report Details

Report No: 20120109-9A847-2147471505

Report Date: 1/9/2012

Sent to Manufacturer/Importer/

Private Labeler: 1/18/2012

Report Publication Date: 2/1/2012

Category of Submitter: Consumer

### Product Details

Product Description: spray foam insulation

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name: BIOBASED INSULATION

Brand Name: Biobased Insulation 501w spray formula

Model Name or Number: 501w Spray Formula

Serial Number:

UPC Code:

Date Manufactured:

Manufacturer Date Code:

Retailer: Evergreen Insulation

Retailer State: Unspecified

Purchase Date: 8/11/2011

### Incident Details

Incident Description:

Approximately 5 months ago a contractor installed approximately 10" of Biobased spray foam insulation on the roof deck and gable ends of our main attic and 4 knee wall attics. We noticed an immediate ammonia and latex-paint like odor after installation. This odor has persisted to a lesser extent despite attempts to ventilate the attic with fans.

After inspecting the main attic space 2 days after insulation I developed a headache that persisted for one week. Since then my wife and I have experienced very frequent tension headaches and neck muscle stiffness that are often triggered by exposure to fumes in the attic. I have also developed a cough that has persisted for several weeks and only occurs when I am in the house. I am a physician and I am very concerned that I have become sensitized to the diisocyanates which are part of the spray foam formula. The insulation continues to outgas as a strong odor is still present in the attic spaces.

I am in the process of having a medical evaluation of my symptoms. I am also attempting to arrange testing in the home of air samples for isocyanates and perhaps volatile hydrocarbons

I have very serious concerns about the safety of spray foam insulation

Incident Date 8/11/2011

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional

My Relationship to the Victim: Self

Gender: Male

Victim's Age When Incident Occurred: 54 years

Injury Information Injury→Injury, No First Aid or Medical

Attention Received

My Relationship to the Victim: My Spouse

Gender: Female

Victim's Age When Incident Occurred: 55 years



### Additional Details

Submitter has product? Yes

Product was damaged before incident? No

Product was modified before incident? No

If yes to any, explanation: insulation is installed in the house. I have called the manufacturer and expressed my concerns.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall

### Comments from the Manufacturer/Private Labeler

Comment from BIOBASED TECHNOLOGIES 2/14/2012

BioBased Technologies takes product safety issues very seriously. We investigate any CPSC database incident report, and we will work directly with consumers and installers who contact us at 1-800-803-5189 with specific concerns.

In this particular instance, the homeowner contacted both the installer and BioBased Technologies about their concerns. We are currently working with both parties to determine the cause of the odor through investigation as well as third-party testing.



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### Report Details

Report No: 20111212-0BD26-2147472446

Report Date: 12/12/2011

Sent to Manufacturer/Importer/

Private Labeler: 12/19/2011

Report Publication Date: 1/11/2012

Category of Submitter: Consumer

### Product Details

Product Description: Polyurethane spray foam insulation

The manufacturer/brand is: Demilec. The product model is:

Sealection 500

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name: Demilec USA

Brand Name: Demilec

Model Name or Number: Sealection 500

Serial Number:

UPC Code:

Date Manufactured:

Manufacturer Date Code:

Retailer: Five Star Foam

Retailer State: Unspecified

Purchase Date: 1/13/2009 This date is an estimate

### Incident Details

Incident Description:

Approximately three years ago I had my attic retrofitted with Demilec Sealection 500 spray foam insulation. First, we were not advised to leave the home during installation and curing. Second, no ventilation was provided. Third, there was a major chemical odor. Then, during the following summer, we noticed that the air had a constant odor and we felt ill when in the home. As our exposure lengthened we found that we were constantly sick with congestion, frequent sinus infections, dizziness, headaches, and general malaise. We found that when we left our house for extended periods of time we got better. We also found that when spend time in or near the attic the symptoms are much worse. We have spent thousands of dollars on testing and incremental remediation efforts, but nothing has helped. The installer and the manufacturer have been of limited help. Industry experts have said that the foam was installed cold and did not mix properly, and that it needs to be removed. The problem is that no one is willing to remove it. The manufacturer and installer are not willing and I have not found another contractor that is interested in performing removal.

Incident Date 1/13/2009

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional

My Relationship to the Victim: Self

Gender: Male

Victim's Age When Incident Occurred: 39 years

### Additional Details

Submitter has product? Yes

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: The foam is still installed in my attic making us sick. I have contacted the manufacturer, but they have been of limited help.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall

Related Files for This Report





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### Report Details

Report No: 20110728-271EF-2147476784

Report Date: 7/28/2011

Sent to Manufacturer/Importer/

Private Labeler: 8/4/2011

Report Publication Date: 8/18/2011

Category of Submitter: Consumer

### Product Details

Product Description: SoyTherm 50 Product Spray Foam used for home insulation.

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name: ECOTECH SPRAY FOAM

Brand Name: SoyTherm 50

Model Name or Number: SoyTherm 50

Serial Number:

UPC Code:

Date Manufactured:

Manufacturer Date Code:

Retailer: Eco Tech Spray Foam

Retailer State: Unspecified

Purchase Date: 1/10/2011

### Incident Details

Incident Description:

We had our basement spray foamed by Eco Tech Spray Foam Co in January of this year. We have noticed a musty odor on some of our furnishings in the basement. The spray foam odor is still very strong in there and we are concerned about our health. In the beginning, I got headaches, now, my left eye tears for no reason. Our basement never had a musty order before we had the spray foam applied. Upon the inspections of our basement that Eco Tech made, we were told that it was very clean and clear and the spray foam application would not be difficult to do. Our home is only ~ 6 years old and we keep a dehumidifier going throughout the Summer months to prevent mold and mildew build up. So, that has never been a problem for us. The musty odor is on some of our furnishings in the basement. We cannot smell the musty odor in the basement because the spray foam odor is still strong no matter how many days we air the basement out. This odor will not leave and it comes up to the living area at times. When this was applied, we were instructed to leave the windows open for like a couple of days and we did that in the middle of winter. When it got warmer outside, we left the windows open for days. The spray foam odor has not left yet. I only noticed the musty odor when I went to use a table that was in the basement in April, and again this month. I didn't pay much attention to it until I looked further into the odor of the spray foam. Now I am concerned about our health and well-being as the fumes are still strong. I feel that this is not normal and it has only happened after the spray foam was applied.

Incident Date 1/10/2011

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Incident, No Injury

My Relationship to the Victim: Unspecified

Gender: Female

Victim's Age When Incident Occurred: 50 years

### Additional Details

Submitter has product? Yes

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: Product is in my basement as insulation. I have contacted manufacturer, but have not made progress.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall

### Report Details

Report No: 20170301-CEDD4-2147405566  
 Report Date: 3/1/2017  
 Sent to Manufacturer/Importer/  
 Private Labeler: 3/14/2017

Report Publication Date: 4/4/2017  
 Category of Submitter: Consumer

### Product Details

Product Description: Spray Foam Insulation  
 Product Category: Building Materials & Home Structures  
 Product Type: Building Materials & Home Structures  
 Product Code: Thermal or Sound Insulation Materials (1803)  
 Manufacturer / Importer / Private Labeler Name: Accella  
 Polyurethane Systems  
 Brand Name: Accella Polyurethane Systems, Inc  
 Model Name or Number:

Serial Number:  
 UPC Code:  
 Date Manufactured:  
 Manufacturer Date Code:  
 Retailer: Mitchell Building and Remodeling, Inc  
 Retailer State: Florida  
 Purchase Date: 1/10/2017

### Incident Details

Incident Description:

Mitchell Building and Construction installed Spray Foam Insulation produced by Accella Polyurethane systems Inc. The home is now uninhabitable due to intense noxious chemical smells in the home. I was personally exposed during the installation and am now sensitized to chemical smells and odors causing burning eyes, difficulty breathing, skin irritation. The home may be a total loss. This is an extremely dangerous product.

Incident Date 1/10/2017  
 Incident Location Unspecified

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional  
 My Relationship to the Victim: Self

Gender: Male  
 Victim's Age When Incident Occurred: 70 years

### Additional Details

Submitter has product? Yes  
 Product was damaged before incident? No  
 Product was modified before incident? No

If yes to any, explanation: Contacted the manufacturer who was uncooperative  
 Have you contacted the manufacturer? Yes  
 If not, do you plan to? N/A

### Associated Recall Details

Associated Recall



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### Report Details

Report No: 20160104-9730D-2147425127

Report Date: 1/4/2016

Sent to Manufacturer/Importer/

Private Labeler: 1/12/2016

Report Publication Date: 1/29/2016

Category of Submitter: Consumer

### Product Details

Product Description: Spray foam insulation, closed cell 1.6 pcf

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name Natural  
Polymers, LLC

Brand Name: Natural-Therm

Model Name or Number:

Serial Number:

UPC Code:

Date Manufactured:

Manufacturer Date Code:

Retailer: Finishing Touches, Inc

Retailer State: New York

Purchase Date: 12/3/2015

### Incident Details

Incident Description:

I had a local contractor install spray foam insulation in the walls and roof for a portion of my home being remodeled. The product is 1.6 PCF closed cell spray foam insulation supplied by Natural-Therm. Procedures for the installation outlined by the Center for the Polyurethanes Industry, American Chemistry Council / Spray Foam Coalition were not followed, including:

1. occupants (my family) were not informed to vacate the premises during the installation
2. the rooms being sprayed were not isolated from the rest of the home (plastic sheets, tape)
3. active ventilation (fans) of rooms being sprayed to exhaust fumes
4. inadequate Personal Protective Equipment used during the installation

During the first day of the installation, family members had a reaction to the off-gassing/fumes and left the home - profusely runny nose, tightened throat, red/watering eyes. One member continues to have this reaction whenever re-entering the home, even several weeks after the installation. I have had a qualitative test performed on the foam which indicates a very high level of isocyanate compound, indicating that the foam was not properly applied, and continues to off-gas.

My primary concern is that my home is no longer habitable by my family since the spray foam was installed.

Incident Date 12/3/2015

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, No First Aid or Medical  
Attention Received

My Relationship to the Victim: My Spouse

Gender: Female

Victim's Age When Incident Occurred: 58 years

Injury Information: Injury→Injury, No First Aid or Medical  
Attention Received

My Relationship to the Victim: Self

Gender: Male

Victim's Age When Incident Occurred: 61 years

Injury Information: Injury→Injury, No First Aid or Medical  
Attention Received

My Relationship to the Victim: Another Relative

Gender: Female

Victim's Age When Incident Occurred: 58 years

### Additional Details

Submitter has product? Yes

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation:

Have you contacted the manufacturer? No

If not, do you plan to? No

### Associated Recall Details

Associated Recall

### Comments from the Manufacturer/Private Labeler

Comment from Natural Polymers, LLC 1/27/2016

Natural Polymers, LLC takes product safety issues very seriously. The following is in response to Report No. 20160104-973D-2147425127, which we received from CPSC on January 20, 2016. The customer who filed this report first contacted Natural Polymers on January 4, 2016 and Natural Polymers has been communicating with the customer since that time. As set forth in the report, the customer's complaint relates to the installation of the product. Even though Natural Polymers did not perform the installation of the finished product, Natural Polymers immediately initiated an investigation, engaged in an open dialogue with the customer, and shared the results of our analysis with the customer.

Based on our investigation, we did not find any problem with the product manufactured and sold by Natural Polymers. Natural Polymers does not believe that this is a product safety issue, but rather an issue between the customer and the installer.

### Report Details

Report No: 20151111-94E48-2147426808  
 Report Date: 11/12/2015  
 Sent to Manufacturer/Importer/  
 Private Labeler: 11/20/2015

Report Publication Date: 12/14/2015  
 Category of Submitter: Consumer

### Product Details

Product Description: Two-part spray polyurethane foam insulation  
 Product Category: Home Maintenance and Structures  
 Product Type: Building Materials & Home Structures  
 Product Code: Thermal or Sound Insulation Materials (1803)  
 Manufacturer / Importer / Private Labeler Name: LAPOLLA  
 INDUSTRIES  
 Brand Name:  
 Model Name or Number:

Serial Number:  
 UPC Code:  
 Date Manufactured:  
 Manufacturer Date Code:  
 Retailer:  
 Retailer State:  
 Purchase Date:

### Incident Details

Incident Description:

A company came and put a spray polyurethane foam insulation under our house in the crawl space under the main house and back porch. After a week, my wife started becoming ill for no reason. She was hospitalized 5 time from end of June thru Aug. We finally put realized that this was the only major change in our house. Since we are not in the house right now she has gotten much better. They didn't even tell us that we had to leave the house while it was being done. They did not put any barrier between the foam and the living area and sprayed it to the metal furnace vents.

[REDACTED]

Incident Date 3/31/2015  
 Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional  
 My Relationship to the Victim: My Spouse

Gender: Female  
 Victim's Age When Incident Occurred: 58 year

### Additional Details

Submitter has product? Yes  
 Product was damaged before incident? N/A  
 Product was modified before incident? N/A

If yes to any, explanation: They said they have nothing else in the matter  
 Have you contacted the manufacturer? Yes  
 If not, do you plan to? N/A

### Associated Recall Details

Associated Recall



### Report Details

Report No: 20150727-6EEB1-2147429882  
 Report Date: 7/27/2015  
 Sent to Manufacturer/Importer/  
 Private Labeler: 8/4/2015

Report Publication Date: 8/25/2015  
 Category of Submitter: Consumer

### Product Details

Product Description: Demilec APX open cell fire rated spray polyurethane foam  
 Product Category: Home Maintenance and Structures  
 Product Type: Building Materials & Home Structures  
 Product Code: Thermal or Sound Insulation Materials (1803)  
 Manufacturer / Importer / Private Labeler Name: Demilec USA  
 Brand Name: Demilec APX  
 Model Name or Number: Demilec APX

Serial Number: N/A  
 UPC Code: N/A  
 Date Manufactured:  
 Manufacturer Date Code:  
 Retailer: Cascade Foam - Installer  
 Retailer State: Unspecified  
 Purchase Date: 5/20/2013

### Incident Details

#### Incident Description:

I am writing saferproducts.gov to inform you of what we have learned concerning the improperly installed spray polyurethane foam (SPF).

In May of 2013 Demilec APX fire rated open cell SPF was applied underneath the roof deck of my house. A Demilec Territory Manager was on site for 3 days along with the Demilec authorized installer.

Due to the foul-smelling odor for weeks after installation the installer acknowledged the problem. Seven weeks later the foam was removed and I collected samples for testing by Eurofins. They reported the two highest VOC's are fire retardants: TEP CAS #78-40-0 (emission rate 89.5  $\mu\text{g}/\text{m}^2\cdot\text{h}$ ) and DEP CAS #78-38-6 (emission rate 4750  $\mu\text{g}/\text{m}^2\cdot\text{h}$ , chamber concentration 4710  $\mu\text{g}/\text{m}^3$ ). DEP fire retardant as reported by Eurofins was extremely high. At no time during my complaints to Demilec representatives concerning the foul odor did they instruct the construction crew or myself to vacate the house. I developed a dry hacking cough while working in the house. After removal of the SPF construction was halted and the house remains vacant, toxic, and unlivable.

The Berkeley Analytical certification for Demilec APX reports emission rates of DEP 2237  $\mu\text{g}/\text{m}^2\cdot\text{h}$  and TEP 564  $\mu\text{g}/\text{m}^2\cdot\text{h}$ . In the report are "Estimated Indoor Air Concentrations ( $\mu\text{g}/\text{m}^3$ )" for Classroom at 2152.6, Office at 1203, Residence at 5007.

CREL's have not been established for these chemicals. Protective Action Criteria (PAC) is the only protocol to determine the health effects. PAC protocol is used by first responders and health officials to determine the impacts of a one hour- once in a lifetime exposure. There are three levels of PAC value (1 to 3) where each successive value is associated with an increasingly severe effect from a higher level of exposure. Each level is defined as follows:

PAC-1: Mild, transient health effects.

PAC-2: Irreversible or other serious health effects that could impair the ability to take protective action.

PAC-3: Life-threatening health effects.

DEP (CAS 78-38-6) PAC protocol

PAC-1 PAC-2 PAC-3

370 4100 460,000  $\mu\text{g}/\text{m}^3$

This puts the Eurofins test in the PAC 2 category and the Berkeley Analytical estimated residential in the PAC 2 category. Schools estimated is in the PAC 1 category; this means after a once in a lifetime/one hour exposure the health effects are mild and transient if you remove yourself from the school and do not reenter. This product should have never been released. It remained on the market for two years 1/13 to 1/15 when

Demilec announced they had reformulated the product. Putting this product to market was fraudulent or negligent by advertising APX as the lowest VOC open cell foam approved for use in schools. I understand that the fire retardants are on the B side (proprietary side) of the APX mix and therefore don't have to be disclosed.

[REDACTED] a Certified Industrial Hygienist, Professional Mechanical Engineer, and president of Indoor Environmental Engineering agrees with the above statements.

Two follow up indoor air quality studies have been conducted after removal of the foam. The most recent is August 2014, 13 months (two summers) after removal of the SPF. The reported concentration of DEP was 210 to 250  $\mu\text{g}/\text{m}^3$ .

[REDACTED] conclusion for the Indoor Air Quality test (210-250  $\mu\text{g}/\text{m}^3$ ) in assessing for a non-occupational (residential) exposure to VOC amounts currently in the house would be in the PAC-2 level for non-occupational exposure. Note, criteria for a non-occupational exposure is significantly lower than the level for a one hour one time first responder exposure as an individual would be exposed for greater than 8 hours per day for their life. He recommends that all the Demilec foam be removed including the surfaces that it was applied to (roof deck and truss). This means removing the roof and truss system as a minimum. The HVAC system and ducting, electrical wiring, recessed light fixtures, solar tubes and other construction material is coated with the Demilec APX foam.

The current status of the house is it remains vacant and in litigation. All contractors who have inspected the house recommend complete removal as it would be less expensive and they could not guarantee a fix if they try to repair.

EPA website:

- EPA is not currently aware of standard accepted removal and/or remediation practices. This is an area for further investigation and research as future renovation and deconstruction of buildings where SPF has been applied are anticipated.

- Note: Removal may not resolve the problem and may create other problems.

When spray foam has been correctly applied, and cured, it is usually considered to be relatively inert; however, there are factors that impact curing rates and some long-term concerns for exposure potential.

If SPF was not applied properly, chemical contaminants may have migrated to hard and/or soft surfaces elsewhere in the building and may be the source of residual odors; therefore, removal may not resolve the issue. Also, disturbing SPF material might generate dust or hazardous materials if done improperly.

I also need assistance in what type of personal protection equipment for deconstruction, protection to neighbors during deconstruction (SPF dust with the DEP), and transport/disposal of the building materials in contact with the APX foam if this is determined to be a hazardous material.

I'm willing to share all the reports and information I have.

Thanks, and hope to hear from your Agency,

[REDACTED]

Incident Date 5/20/2013

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional

My Relationship to the Victim: Self

Gender: Male

Victim's Age When Incident Occurred: 58 years

### Additional Details

Submitter has product? Yes

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: I have retained samples of the foam during removal. My attorney is in litigation with Demilec.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall

Related Files for This Report





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### Report Details

Report No: 20141010-463AD-2147440190  
Report Date: 10/10/2014  
Sent to Manufacturer/Importer/  
Private Labeler: 10/10/2014

Report Publication Date: 11/4/2014  
Category of Submitter: Consumer

### Product Details

Product Description: Spray Polyurethane Foam Insulation  
Product Category: Home Maintenance and Structures  
Product Type: Building Materials & Home Structures  
Product Code: Thermal or Sound Insulation Materials (1803)  
Manufacturer / Importer / Private Labeler Name: ICYNENE INC  
Brand Name: Icynene  
Model Name or Number: LD-C-50 Classic Open Cell Spray  
Polyurethane Foam Insulation

Serial Number: N/A  
UPC Code: N/A  
Date Manufactured: 11/5/2013  
Manufacturer Date Code:  
Retailer: Miller's Insulation  
Retailer State: New Mexico  
Purchase Date: 11/6/2013 This date is an estimate

### Incident Details

#### Incident Description:

I built a custom home, completed January 2014. In May 2014, when the weather warmed up, the house began to smell badly every afternoon. After searching the home for the cause of the smell it was found to be coming from the attic. I suspected the Spray Polyurethane Foam insulation (SPF) in the attic was the source of the smell. On May 28th, I moved my family out of the home due to constant headaches, throat pain, coughing, and other symptoms. I sent some of the SPF to a lab for testing, and also ran Indoor Air Quality tests on my home. The lab has since confirmed that the SPF is off-gassing chemicals into my home, and that the home is not safe to live in.

Incident Date 5/28/2014

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: My Child

Gender: Male  
Victim's Age When Incident Occurred: 1 years 9 months

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: Self

Gender: Male  
Victim's Age When Incident Occurred: 33 years

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: My Spouse

Gender: Female  
Victim's Age When Incident Occurred: 33 years

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: My Child

Gender: Female  
Victim's Age When Incident Occurred: 5 years

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: My Child

Gender: Female  
Victim's Age When Incident Occurred: 0 years 7 months

### Additional Details

Submitter has product? Yes

Product was damaged before incident? No

Product was modified before incident? No

If yes to any, explanation: Manufacturer has been notified by installer (Miller's Insulation)

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Associated Recall Details

Associated Recall

### Report Details

Report No: 20130701-3A3B4-2147454639

Report Date: 7/1/2013

Sent to Manufacturer/Importer/

Private Labeler: 7/9/2013

Report Publication Date: 7/30/2013

Category of Submitter: Consumer

### Product Details

Product Description: Polyurethane closed cell spray foam insulation for use in residential homes

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name: BASF CORPORATION INFORMATION SYSTEM

Brand Name: Comfort Foam

Model Name or Number:

Serial Number:

UPC Code:

Date Manufactured:

Manufacturer Date Code:

Retailer: Tri -States Insulation

Retailer State: Pennsylvania

Purchase Date: 6/6/2009

### Incident Details

Incident Description:

We hired a contractor to install 3" of closed cell polyurethane spray foam insulation in a retrofit attic. The application process went horribly wrong while I was in the home and we were exposed to the chemicals. We were told by the contractor and manufacturer that these chemicals are safe including to my pregnant wife. The chemical manufacture confirmed misapplication and said all the improperly installed foam had to be removed. The contractor refused to follow the manufacture guideline. We continued to live in the home for 4 years while having 2 children born into the environment. We are all suffering medical problems which have been confirmed by the medical community. We were told by numerous doctors to abandon our home and leave all of our possessions behind. We have been out of the home since April 4th, 2013.

Incident Date 6/6/2009

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: Self

Gender: Male  
Victim's Age When Incident Occurred: 38 years

Injury Information: Injury→Injury, Seen by Medical Professional  
My Relationship to the Victim: My Child

Gender: Female  
Victim's Age When Incident Occurred: 0 years 3 months

Injury Information: Injury→Injury, Hospital Admission  
My Relationship to the Victim: Unspecified

Gender: Male  
Victim's Age When Incident Occurred: 0 years 1 months

Injury Information: Injury→Injury, First Aid Received by Non-Medical Professional  
My Relationship to the Victim: Unspecified

Gender: Female  
Victim's Age When Incident Occurred: 38 years

Injury Information: Unspecified  
My Relationship to the Victim: Unspecified

Gender: Unspecified  
Victim's Age When Incident Occurred: Unspecified

### Additional Details

Submitter has product? Yes

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: The manufacturer has confirmed the product is defective

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A

### Report Details

Report No: 20130618-861EB-2147455119  
 Report Date: 6/18/2013  
 Sent to Manufacturer/Importer/  
 Private Labeler: 6/26/2013

Report Publication Date: 7/18/2013  
 Category of Submitter: Consumer

### Product Details

Product Description: spray polyurethane foam insulation. closed cell - applied by installer. heat lok soy 200 manufactured by Demilec  
 Product Category: Home Maintenance and Structures  
 Product Type: Building Materials & Home Structures  
 Product Code: Thermal or Sound Insulation Materials (1803)  
 Manufacturer / Importer / Private Labeler Name: Demilec USA  
 Brand Name: Heatlok Soy 200

Model Name or Number: Heatlok Soy 200  
 Serial Number:  
 UPC Code:?  
 Date Manufactured:  
 Manufacturer Date Code:  
 Retailer: Superior Spray Foam  
 Retailer State: Unspecified  
 Purchase Date: 5/23/2011

### Incident Details

#### Incident Description:

We had polyurethane closed cell foam installed. Demilec Heatlok soy 200, a supposed "green" product. It is giving off VOC's - and has ruined our home. the date of the incident is the day it was installed.

Incident Date 5/23/2011

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Injury→Injury, No First Aid or Medical Attention Received  
 My Relationship to the Victim: My Spouse

Gender: Female  
 Victim's Age When Incident Occurred: 33 years

Injury Information: Injury→Injury, No First Aid or Medical Attention Received  
 My Relationship to the Victim: Self

Gender: Male  
 Victim's Age When Incident Occurred: 46 years

### Additional Details

Submitter has product? Yes  
 Product was damaged before incident? N/A  
 Product was modified before incident? N/A

If yes to any, explanation: have samples - superior and demilec both know there's a problem  
 Have you contacted the manufacturer? Yes  
 If not, do you plan to? N/A

### Associated Recall Details

Associated Recall



Related Files for This Report



Description: image of burn marks from incorrect installation



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### Report Details

Report No: 20120301-8C9A4-2147469697

Report Date: 3/1/2012

Sent to Manufacturer/Importer/

Private Labeler: 3/12/2012

Report Publication Date: 3/26/2012

Category of Submitter: Consumer

### Product Details

Product Description: 5" closed cell polyurethane spray foam insulation, white

Product Category: Home Maintenance and Structures

Product Type: Building Materials & Home Structures

Product Code: Thermal or Sound Insulation Materials (1803)

Manufacturer / Importer / Private Labeler Name: CERTAINTEED CORP (DRYWALL PRODUCTS)

Brand Name: CertaSpray Polyurethane Closed Cell Foam

Model Name or Number: Mixture

Serial Number: CAS# none Assigned

UPC Code:

Date Manufactured: 6/13/2008

Manufacturer Date Code: MSDS #: CT 10110-1

Retailer: Upstate Spray Foam

Retailer State: Unspecified

Purchase Date: 9/13/2011

### Incident Details

Incident Description:

On [November 10, 2011] I had 5" of closed cell polyurethane spray foam insulation installed in the rafters of my house. The house has no attic, but has two lofts. The contractor is Upstate Spray Foam of West Winfield, NY. I was not given a Materials Safety Data Sheet at the time of the installation or at the appointment prior to the installation. I requested one after the installation for reasons I will explain. I was not told when to enter the house, but was told by the installer that day that "it would cure in 2 and 1/2 hours, sheet-rockers work right behind us!" The contractors arrived at my house approximately 8 a.m., and were gone by 5 p.m. that day. I returned to the house at 5 p.m., it was a rainy, damp, and chilly day so I put the heat on low and left immediately. While I was there I noticed a subtle sweet/burning odor. I called the installer on Wednesday to tell him that I was please and the smell didn't seem so bad, but would it go away? I had asked him prior to the agreement, if there would be an odor and he said, "After it cures there will be none." On the day of the phone call he said, "It will cure in 24 hours, and after that there will be no odor." Two weeks later, and after airing the house out with a fan and all doors and windows open, the odor remained. A worker complained that there, "was a burning smell" in my house. It was when I overheard him telling a mutual friend later that day, that I became alarmed and knew that I had to call Upstate Spray Foam Co., to report the odor again. [REDACTED] came out and claimed that he, "didn't smell anything". The electrician working in my house reported that he did smell something strong in one of the lofts. The owner of Upstate Spray Foam Co., and a representative from the manufacturer; Certain-Teed also claimed that they "did not smell anything." Meanwhile other people have described it as a "sweet or burning" odor. [REDACTED] Meanwhile, I had to cancel work on my house, although I planned to move in by October 2011. The company who claimed they wanted to help, has not responded to my request to remove it based on the smell alone, which after you are in the house for more than 5 minutes is sickening. I can also smell it when I am standing outside near an open door. Another representative from Certain-Teed who I spoke to on the phone told me "there should be no odor after 24 hours and there is something wrong with the installation." A representative from the Polyurethane Foam Alliance also said the very same thing. I never paid them because they did an unsatisfactory job and they had promised me prior to the installation, that there would be no smell. They have put a lien on my house, and have not done a thing to remedy the situation. I am very concerned about not only my safety, but the safety of the public at large. I shutter to think about how this could affect small infants, children, or pregnant women. I wish that I had never had it installed in my house. [REDACTED]

Incident Date 11/10/2011

Incident Location Home/Apartment/Condominium

### Victim Involved

Injury Information: Incident, No Injury

My Relationship to the Victim: Self

Gender: Female

Victim's Age When Incident Occurred: 60 years

### Additional Details

Submitter has product? Yes

Product was damaged before incident? N/A

Product was modified before incident? N/A

If yes to any, explanation: Please refer to my comments.

Have you contacted the manufacturer? Yes

If not, do you plan to? N/A