



Spray Polyurethane Foam Systems Containing Unreacted Diisocyanates

Safer Consumer Products Branch



California
Environmental
Protection Agency



Department of
Toxic Substances
Control



Topics for Discussion

- Priority Products: Description & Exclusions
- Why are they listed?
 - Chemicals of Concern
 - Hazards
 - Exposure Considerations
- Alternatives
- Market Information



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Priority Products

- Spray polyurethane foam (SPF) systems containing unreacted diisocyanates
- Used for insulation, roofing, filling and sealing of voids and gaps
- GPC Brick 10002456 & 10002692



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Priority Products

- Two-component insulation
- SPF roofing systems
- One-component products



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Priority Products



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Exclusions

- Cured, rigid SPF products
- Polyurethane products used in small quantities

Urethane-based coatings are considered integral component of SPF roofing systems, thus they are NOT excluded.



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Bases for Selection

Exposure to diisocyanates is harmful to both workers and the general public (sensitive populations).



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Chemicals of Concern

- Methylene diphenyl diisocyanate (MDI)
 - Mixed MDI isomers (CAS #: 26447-40-5)
 - 4,4'-Methylenediphenyl diisocyanate (CAS #:101-68-8)
- Toluene diisocyanates (TDI)
 - Mixed (CAS #: 26471-62-5)
 - 2,4-Toluene diisocyanate (CAS #: 584-84-9)
 - 2,6-Toluene diisocyanate (CAS #: 91-08-7)
- Hexamethylene-1,6-diisocyanate (CAS #: 822-06-0)



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Why TDI and HDI Included

- TDI and HDI may be used in SPF roof coatings
- Low levels of TDI were declared in the MSDSs of some SPF systems



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Hazards

- A leading attributable cause of asthma in the workplace
- Known respiratory, skin, and mucous membrane toxicants, capable of irritating, sensitizing, and causing asthma or triggering severe asthma attacks



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Bases for Selection: Growing Demand

- Quantity / volume
- Popularity
- Recognition: energy savings



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Exposure Considerations: Populations of Particular Concern

- Contractors:
small/independent, not
subject to OSHA
rules/oversight
- Do-it-yourselfers
(DIYers)



DIY Spray Foam Insulation Kits



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Exposure Considerations

Some independent contractors and DIYers:

- Unaware of the risks
- Insufficient training
- Little or no PPE
- Lack of engineering controls



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Are there alternatives?

- Alternative insulation materials
- Roofing materials



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Market Information

- A few large companies supply SPF chemicals and formulations
- System houses make and distribute SPF systems
- Number of California-based system houses, product types, and production are not available to the Department



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How to comment?

We encourage written comments to be submitted by June 30, 2014.

- SaferConsumerProducts@dtsc.ca.gov

Thank you!



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Topic 1: Priority Product Description

1. Are the definition and terms clear and unambiguous as to which related products are included or excluded?
2. Are there GPC GS1 brick codes that would be helpful in characterizing this product?
3. Are there other considerations for this Priority Product description that DTSC should know about?



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Topic 2: Chemical(s) of Concern and Alternatives

1. Are there other Candidate Chemicals in this product that you suggest be considered?
2. Are there functionally acceptable alternatives to this Priority Product?
 - a. Are they commercially available?
 - b. Do they require the use of a replacement chemical?
 - c. Are there known hazards associated with these alternatives?
 - d. Are any potential replacement chemicals listed as Candidate Chemicals?



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Topic 3: Market Information

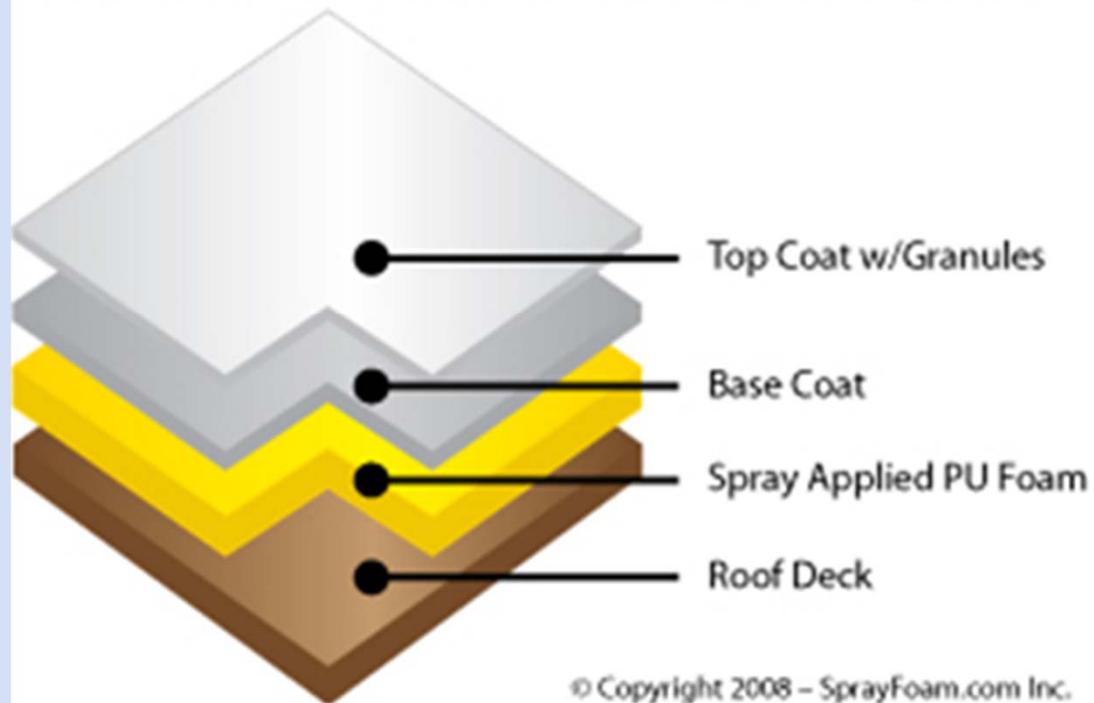
1. What is the market presence of the Priority Product?
2. How is the Priority Product marketed and/or sold?
3. What types of businesses are involved in the supply chain for manufacturing the Priority Product?



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SPF Roofing Systems

Typical Polyurethane Roof System

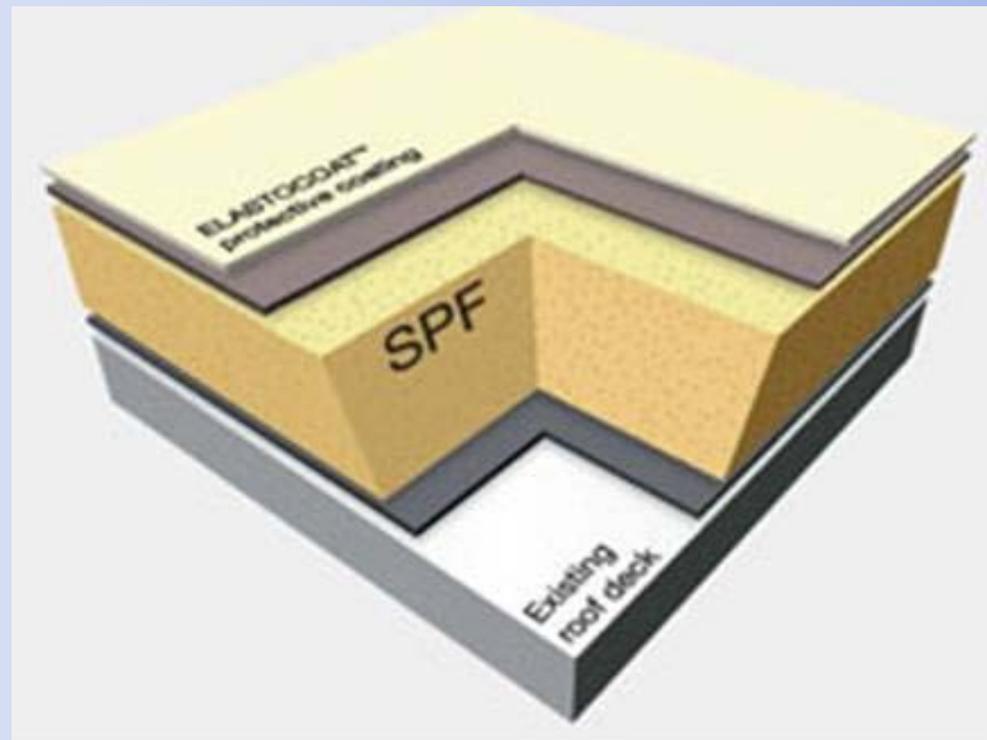


Sprayform.com, <http://www.sprayfoam.com/spps/ahpg.cfm?spgid=43>



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BASF SPF Roofing Systems



BASF SPF Roof System Description: <http://www.spf.basf.com/elastospray.php>



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