

Regulatory and Risk Management Actions for Diisocyanates

Katherine Sleasman

U.S. Environmental Protection Agency

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Overview of Presentation

- TRI and RSEI Information on Diisocyanates
- Background on the MDI and TDI Action Plans
- Proposed Regulatory Actions
- Risk Management Activities
 - Spray Polyurethane Foam Insulation(SPF) Federal Partners Goals and Progress
- Community Exposure
- Information Sources



TRI and RSEI Information on Diisocyanates

- Diisocyanates were listed on the Toxic Release Inventory (TRI) in 1995.
- TRI data contains information on toxic chemical releases and waste management activities reported by certain industries and federal facilities. TRI data on diisocyanates for 2010:

Chemical	<u>Total On-site Disposal or Other Releases</u>	<u>Total Off-site Disposal or Other Releases</u>	<u>Total On- and Off-site Disposal or Other Releases</u>
Diisocyanates	635,006	1,158,975	1,793,982

- Diisocyanates rank among the most toxic chemicals, according to the Risk Screening Environmental Indicator (RSEI) model.
- Diisocyanates are also listed as a Hazardous Air Pollutant.



MDI & TDI Action Plans

- Diisocyanates in vapors, aerosols, and dust can cause
 - asthma, other respiratory and breathing problems. In the severe cases fatal reactions have been reported (see NIOSH ALERT).
 - skin, eye, and dermal irritation
 - sensitization
- EPA's concerns:
 - exposures to the consumer or self-employed worker while using products containing uncured (unreacted) MDI, TDI and related polyisocyanates (e.g., spray-applied foam sealants, adhesives, and coatings).
 - incidental exposures to the general population while such products are used in or around buildings, including homes or schools.



Proposed Regulatory Actions for MDI and TDI Action Plans

- Summary of proposed actions for MDI and TDI:
 - Issue a “8(c)” data call-in of allegations of adverse health effects.
 - Initiate a “8(d)” request for industry unpublished health and safety studies.
 - Issue a Significant New Use Rule for uncured TDI in consumer products.
 - Consider initiating a test rule to require exposure monitoring studies in consumer products, and require studies on uses and exposures by self-employed workers.
 - Consider other risk management regulatory and non-regulatory actions.



TSCA Section 8(c) Allegations of Significant Adverse Reactions

- EPA's TSCA Section 8(c) rule requires producers, importers, and certain processors of chemical substances and mixtures to keep records concerning significant adverse reaction allegations and report those records to EPA upon notice in the Federal Register or upon notice by letter.
- Under TSCA section 8(c) records must be kept at a company's headquarters or at a site central to their chemical operations. The record must contain the following information:
 - the original allegation as received
 - an abstract of the allegation
 - the results of any self-initiated investigation regarding the allegation
 - copies of any further required information regarding the allegations (e.g., copies of any reports required to be made to the U.S. Occupational Safety and Health Administration)



TSCA Section 8(d) Health and Safety Studies

- EPA's TSCA Section 8(d) "Health & Safety Data Reporting Rule" was developed to gather unpublished health and safety information on chemical substances and mixtures needed by EPA to carry out its TSCA mandates (e.g., to support OPPT's Existing Chemicals Program and Chemical Testing Program and to set priorities for TSCA risk assessment/management activities).
- Persons who must report under the TSCA Section 8(d) rule include:
 - Current as well as prospective producers, importers, and (if specified) processors of the subject chemical(s); and
 - Persons who, in the 10 years preceding the effective date that a substance or mixture is added to the rule, either had proposed to produce, import, or (if specified) process, or had produced, imported, or processed (if specified) the substance or listed mixture.



Significant New Use Rule for TDI

- EPA is proposing a SNUR to designate the use of uncured TDI and its related polyisocyanates in a consumer product as a new use requiring prior notice to the Agency.
- TSCA section 5(a) authorizes EPA to determine that a use of a chemical substance is a “significant new use.” EPA must make this determination by rule after considering all relevant factors, including those listed in TSCA section 5(a)(2), i.e.,
 - The projected volume of manufacturing and processing of a chemical substance.
 - The extent to which a use changes the type or form of exposure of human beings or the environment to a chemical substance.
 - The extent to which a use increases the magnitude and duration of exposure of human beings or the environment to a chemical substance.
 - The reasonably anticipated manner and methods of manufacturing, processing, distribution in commerce, and disposal of a chemical substance.



TSCA Section 4 Test Rules

- EPA must make the following findings to initiate a Test Rule to collect data:
- Hazard or "A" Finding - EPA must determine that existing data show that the subject chemical "may present an unreasonable risk of injury to health or the environment" and that the probability of exposure to the subject chemical substance is more than just theoretical; and/or
- Exposure or "B" Finding - EPA must show that the chemical is produced or imported in substantial quantities, and either enters the environment in substantial quantities or there is substantial or significant human exposure; and
- Data Adequacy Finding - EPA must show that existing data are inadequate for risk assessment; and
- Testing is Necessary Finding - EPA must show that testing is needed to develop the data necessary to conduct the needed risk assessment.



TSCA Section 6 Actions

- TSCA section 6 gives EPA the authority to protect against unreasonable risk of injury to health or the environment from chemical substances.
 - If EPA finds that there is a reasonable basis to conclude that the chemical's manufacture, processing, distribution, use or disposal presents an unreasonable risk.
 - Actions under section 6 could include but are not limited to: prohibiting or limiting manufacture, processing, or distribution in commerce of a chemical, requiring warnings and instructions with respect to use, distribution, or disposal, recordkeeping requirements, and disposal requirements.



Federal SPF Workgroup

- EPA
- NIOSH
- OSHA
- CPSC
- ATSDR



Industry Workgroup

- ACC Center for the Polyurethanes Industry (CPI)
- Spray Polyurethane Foam Alliance (SPFA)
- Individual Companies





SPF Partnership Goals

- Accurate & comprehensive communication of hazards.
- Avoidance of misleading and/or deceptive marketing claims.
- Develop & adopt practices to prevent harmful exposures.
- Address exposure assessment gaps.



EPA and Auto Refinishing Partnership

- Partnership with collision repair industry.
- Auto repair shops and technical schools use and release harmful chemicals, including diisocyanates, and those emissions may pose risks to residents that live nearby.
- The partnership's aim was to encourage best practices and technologies to reduce risk and pollution.
 - Promoted ventilation techniques, personal protective equipment (PPE), spray techniques, and gun cleaning.
 - Protect the worker, vocational students, and the nearby community



ATSDR Community Exposure

- ATSDR conducted a study on residents that live near TDI facilities in North Carolina based on TRI data.
- The study compared two communities one near a facility and one further away.
- The comparison community not near the industrial facility showed positive findings of diisocyanates.
- Findings suggested that non-occupational exposure may be occurring due to consumer products containing diisocyanates.



Summary

- TRI emissions and releases of diisocyanates are important in preventing exposures to communities.
- Diisocyanates are widely used in the manufacture of a broad class of polyurethane products that are produced in industrial facilities.
- They also react on-site at auto body shops, vocational school, and in a wide variety of products used in the home.
- Proposed regulations and voluntary efforts needs to continue to better understand exposures.



Information Sources

- EPA's Action Plan website for MDI:
<http://www.epa.gov/opptintr/existingchemicals/pubs/actionplans/mdi.pdf>
- EPA's Action Plan website for TDI:
<http://www.epa.gov/opptintr/existingchemicals/pubs/actionplans/tdi.pdf>
- Design for the Environment Spray Polyurethane Foam:
http://epa.gov/dfe/pubs/projects/spf/spray_polyurethane_foam.html
- Dockets
 - MDI <http://www.regulations.gov/#!docketDetail;rpp=10;po=0;D=EPA-HQ-OPPT-2011-0182>
 - TDI <http://www.regulations.gov/#!docketDetail;rpp=10;po=0;D=EPA-HQ-OPPT-2011-0180>
- Project Coordinator:
 - Katherine Sleasman; 202-564-7716; sleasman.katherine@epa.gov