



**Paint Removers:  
Methylene Chloride and  
n-Methylpyrrolidone (NMP)**

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**Community Webinar**

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## Outline

- Methylene Chloride and n-Methylpyrrolidone (NMP)
  - Overview & Risk Assessments
  - Uses Under Consideration
- Toxic Substances Control Act (TSCA) Section 6(a)
  - Background
  - Developing the Regulations
- Regulations in Your Area



TSCA Work Plan for Chemical Assessments

# BACKGROUND



## TSCA Work Plan for Chemical Assessments

- EPA has identified a subset of existing chemicals as a high priority for risk assessment
- In 2012-2013:
  - Formed a TSCA Work Plan, which identified the subset of 83 chemicals and described the methodology for how they were given this priority
  - Began problem formulation process for first round of draft risk assessments for peer review and public comment



## TSCA Work Plan for Chemical Assessments

- 2014-2015:
  - Released final risk assessments (TCE, methylene chloride, NMP, antimony trioxide, HHCB)
    - No risks found for uses assessed for antimony trioxide and HHCB
    - Risks found for uses assessed for TCE, methylene chloride, and NMP. Risk management process began.
  - Refreshed Work Plan with updated exposure information; currently contains 90 chemicals
  - Problem formulation and data needs assessment underway for:
    - Several flame retardant clusters
    - Additional chemicals (including 1-bromopropane)



Chemical & Rulemaking Overview

# **METHYLENE CHLORIDE & NMP**



# Overview: Methylene Chloride and NMP

- EPA assessed Methylene Chloride and NMP paint removal uses as part of its TSCA Work Plan for Chemical Assessments
- Methylene Chloride
  - Volatile, colorless liquid, non-flammable, non-explosive, non-corrosive, inexpensive.
  - Used frequently as a solvent; also in adhesives, metal cleaning, chemical processing, pharmaceuticals.
  - 25% of methylene chloride in the U.S. is used in paint removers (66.3 million lbs), down from 50% in 1980s.
- NMP
  - Mildly volatile, colorless liquid, low flammability, non-explosive.
  - Used frequently as a solvent; also in adhesives, leather and brush cleaners, manufacturing of circuit boards, pesticides, petrochemical processing.
  - 9% of NMP in the U.S. is used in paint removers (16.6 million lbs).
  - Frequently is an alternative to methylene chloride paint removers.



# Overview: Methylene Chloride and NMP



*Above: Removing paint from a bathtub (California Dept. of Public Health).*





# Risk Assessment: Methylene Chloride

- Final risk assessment released in August 2014
- Risk assessment identified inhalation risks from paint removers containing methylene chloride:
  - Chronic effects: cancer and liver toxicity
  - Acute effects: confusion, incapacitation, and death
  - Risks from chronic (lifetime) exposure in majority of scenarios except when personal protective equipment (respirator) is worn in low exposure scenarios
  - Risks from acute high-end exposure (small, enclosed room with poor ventilation, such as a bathroom)
  - Risks to bystanders except in lowest exposure scenarios



# Risk Assessment: NMP

- Final risk assessment released March 2015
- Risk assessment identified dermal (liquid or vapor through skin) and inhalation exposure risks from the use of paint removers containing NMP:
  - Developmental effects (acute: fetal mortality; chronic: reduced fetal body weight). Concern is for women of child-bearing age
  - Chronic risks if used:
    - More than 8 hours per day for more than 5 consecutive days, even if specialized protective gloves were worn
    - More than 4 hours per day, for more than 5 consecutive days, if specialized protective gloves are not worn
  - Acute risks if used:
    - More than 8 hours on a single day, even if specialized protective gloves were worn
    - More than 4 hours on a single day, if specialized protective gloves are not worn
  - No risks to bystanders



## Uses Under Consideration

- Uses considered for regulation under TSCA section 6(a) are occupational and consumer paint removers containing methylene chloride or NMP.

# Paint Removal Exposure Scenarios Assessed by EPA

- Paint removal can be performed for a variety of activities:
  - Bathtub refinishing
  - Automotive refinishing
  - Art restoration and conservation
  - Aircraft paint stripping
  - Ship paint stripping
  - Graffiti removal
  - Home refinishing of wood structures and flooring





Background and Potential Regulation

# **TSCA SECTION 6(a)**



## TSCA Section 6(a)

- Provides EPA with the authority to prohibit or limit the manufacture, processing, distribution in commerce, use or disposal of a chemical or mixture.
- EPA must make certain findings before a section 6(a) rule may be finalized:
  - There is a reasonable basis to conclude that a chemical substance or mixture “presents or will present an **unreasonable risk** of injury to health or the environment.”
  - The regulatory option chosen is the **least burdensome** option that **adequately protects** against such risk.



## Options Under TSCA Section 6(a)

- Prohibit or limit manufacture, processing or distribution in commerce.
- Prohibit or limit for particular use or above a set concentration.
- Require warnings and instructions.
- Require recordkeeping and testing.
- Prohibit or regulate manner or method of commercial use.
- Prohibit or regulate manner or method of disposal.
- Direct manufacturers/processors to give notice of risk to distributors and users and replace or repurchase.



# Sample of State Regulations

State	Methylene Chloride	NMP
Alaska	Listed as a carcinogenic hazardous substance	
California	Listed by Proposition 65; listed as an informational candidate under CA's Safer Consumer Products regulations; designated chemical for biomonitoring	Listed by Proposition 65; proposed PEL at 1 ppm in an 8-hr TWA; requires employees to wear appropriate gloves; listed as an informational candidate under CA's Safer Consumer Products regulations
Florida	Listed as a liver carcinogen	
Indiana, Iowa, South Carolina	Established detection monitoring regulations	
Minnesota	Chemical of high concern	Chemical of high concern
New Hampshire		Toxic air pollutant
New Jersey		Hazardous substance
Pennsylvania	Listed as 'environmental' and 'special' hazard (for carcinogenicity)	Hazardous substance
Vermont		Air pollutant
Washington	Chemical of high concern under Children's Safe Products Act; regulated to minimize occupational exposure	Chemical of high concern under Children's Safe Products Act





# Environmental Justice

- We would like to hear from you!
- Are there any **disproportionate environmental and public health impacts** on minority, low-income, or indigenous populations from use of these chemicals in paint removers?
  - For example, do any communities use them more (or less) frequently?
- Do you have any concerns about these chemicals for these uses?
- What are your thoughts on the rulemaking?



- All risk assessments:  
[www.epa.gov/oppt/existingchemicals/pubs/riskassess.html](http://www.epa.gov/oppt/existingchemicals/pubs/riskassess.html)
- For paint removers rulemaking:
  - Niva Kramek, 202-564-2897, [kramek.niva@epa.gov](mailto:kramek.niva@epa.gov)