Green Chemistry / Safer Alternatives

Essential Component of an Occupational Public Health Program

Julia Quint, PhD
CA Dept. Public Health (Retired)

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Overview
Protecting Workers From Chemical Hazards
Why Green Chemistry is Important

- Addresses the unique impacts of toxic chemicals on workers’ health
- Prevents contamination of environment & communities caused by workplaces
- Promotes integrated strategies to protect workers, communities, & the environment
- Builds on safer chemical alternatives currently used in many industrial applications
Toxic Chemicals
Unique Impacts on Workers

- Exposures during manufacture, use, disposal
- Higher, longer, & more frequent exposures
- Combined environmental and work exposures
- Potential chronic disease risks due to lack of protective exposure limits
- Difficult for employers of small businesses to comply with training & protective measures
Some Chemicals That Pose Chronic Health Risks

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Health Hazard(s)</th>
<th>Cancer Risk at PEL* or Regulatory Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibutyl Phthalate</td>
<td>Development; male, female reproduction</td>
<td>Regulated as an irritant</td>
</tr>
<tr>
<td>Chromium VI</td>
<td>Cancer</td>
<td>10-45 per 1000**</td>
</tr>
<tr>
<td>Perchloroethylene</td>
<td>Cancer</td>
<td>130 per 1000</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>Cancer</td>
<td>24 per 1000</td>
</tr>
<tr>
<td>Lead</td>
<td>Development; male, female reproduction</td>
<td>Reg. not based on current science</td>
</tr>
<tr>
<td>Cadmium</td>
<td>Cancer</td>
<td>3-15 per 1000</td>
</tr>
</tbody>
</table>

*Permissible Exposure Limit (Cal/OSHA)

**Excess cancers per 1000 workers exposed over a working lifetime
Workers & Public Can Be Exposed to Same Chemical

Degreaser

Paint Thinner

Plant Next to Public Space

Consumer Product

Available Online

Waterproof Coating

Consumer Product

Autobody Shop Next to Houses
Integrating Strategies to Protect Against Chemical Hazards—Why it’s Important

- Prevents transfer of risks
- Decreases worker & community health risks
- Simplifies regulatory compliance
- Cost-effective
- Promotes collaboration/sharing of expertise
- Broadens support for green chemistry
Protecting Public Health & the Environment From Chemical Hazards — What’s Needed

- Safe Chemicals Act 2010 (TSCA Reform)
- Information to prioritize interventions
- Resources to develop, test, provide training on, & implement safer chemical alternatives
- Requirement to work across agencies & programs to develop & implement green chemistry regulations & policies