OSHA Training Toolbox Talk: Hazardous Substance Awareness – Isocyanates

[Reference: Parts 1910, 1915, and 1926, subpart Z; 1926 subpart Z]

Isocyanates are a group of highly reactive chemicals widely used in modern workplaces. They are commonly found in spray polyurethane foam insulation, two-part coatings and paints, adhesives, sealants, and some elastomer products. Although these chemicals are essential to many industrial and construction processes, they can pose potentially serious health risks if not handled properly.

Isocyanates are used because they produce durable, flexible, and corrosion-resistant coatings, foams, and adhesives. Tasks such as spraying, sanding, or cutting cured materials can generate particles or vapors that increase exposure risk. Because isocyanates may not have a strong odor or immediate visible warning, workers cannot rely on senses alone to detect potential hazards.

Exposure can occur during spraying, mixing, application, sanding, cutting, or removal of materials containing isocyanates. Spraying operations and sanding cured products create fine airborne particles or vapors that can be inhaled or settle on skin and clothing. Even small amounts absorbed over time may be hazardous, especially if safe work practices are not followed.

The primary health concern with isocyanates is respiratory sensitization. Repeated or prolonged exposure can cause asthma-like symptoms, wheezing, and difficulty breathing. Once a worker becomes sensitized, even very low future exposures can trigger severe reactions. Skin contact can also contribute to sensitization, so use of protective clothing and other PPE is important. Also, contaminated clothing or equipment can carry chemicals outside the workplace, creating a take-home hazard for family members.

Precautions to reduce exposure include using local exhaust ventilation, spray booths, or other engineering controls, following safe work practices, and wearing proper personal protective equipment, including chemical-resistant gloves, protective clothing, eye protection, and respirators when required. Good hygiene practices, such as washing hands and exposed skin before eating or leaving work, are critical. Contaminated clothing should be handled according to established procedures to prevent bringing chemicals home.

If you are working with or around isocyanates, or if you see a label or warning sign indicating their presence, remember that merely being near isocyanates does not necessarily mean you are overexposed or at imminent risk. Following proper controls, procedures, and safety measures helps ensure exposure remains below OSHA's permissible limits.

If you have any questions or concerns about isocyanate hazards or exposure, please direct them to your safety manager, supervisor, or other workplace representative. And please be sure to sign the training certification form to ensure you get credit for attending today's OSHA toolbox talk.

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Training led by: _____

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