



Isocyanates Fact Sheet

What are isocyanates?

Isocyanates are compounds containing the isocyanate group (-NCO). They react with compounds containing alcohol (hydroxyl) groups to produce polyurethane polymers.

How are employees exposed to isocyanates?

Jobs that may involve exposure to isocyanates include painting, foam-blowing and the manufacture of many polyurethane products, such as chemicals, polyurethane foam, insulation materials, furniture, foam mattresses, under-carpet padding, packaging materials, shoes, laminated fabrics, polyurethane rubber and adhesives, and during the thermal degradation of polyurethane products.

Spray-on polyurethane products containing isocyanates have been developed for a wide range of uses to protect cement, wood, fiberglass, steel and aluminum, including protective surface coatings for truck beds, trailers, boats, foundations and decks.

How does isocyanate exposure affect me?

Health effects of isocyanate exposure include irritation of skin and mucous membranes, chest tightness, and difficult breathing. Isocyanates can also sensitize workers, making them subject to severe asthma attacks if they are exposed again. Death from severe asthma in some sensitized subjects has been reported. Isocyanates include compounds classified as potential human carcinogens and are known to cause cancer in animals.

What should I do to protect myself?

Personal protective equipment should be used to prevent or minimize exposure. Gloves, goggles and/or face shields should be used to prevent skin contact as well as other garments as necessary. Additionally, respiratory protection may be needed if exposure levels exceed the limits set for the type of isocyanate used.

Does OSH have standards for isocyanates?

Yes, OSH regulates certain isocyanates. The following OSH standards contain permissible exposure limits (PELs) for isocyanates:

- **13 NCAC 7F.0101**—N.C. state-specific PELs for general industry
- **29 CFR 1910.1000**—general industry
- **29 CFR 1915.1000**—maritime industry
- **29 CFR 1926.55**—construction industry

Where can I find additional information?

Please review our [Isocyanates Subject Index](#) page.