

**Please Be Aware - OSHA's National Emphasis Program - Occupational
Exposure to Isocyanates**

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Three months into the Occupational Safety and Health Administration's three year National Emphasis Program for Occupational Exposure to Isocyanates, OSHA has already inspected 45 workplaces. Over the next 2.75 years, OSHA will likely visit another 400 facilities, with the goal of strengthening protections for workers exposed to isocyanates. This means that general industry, as well as construction and maritime industries, that use or produce polyurethane polymers may likely be subject to OSHA inspection.

Although the 45 inspections that have occurred to date have resulted in no fines, employers that use or produce polyurethane polymers should be aware that OSHA inspections could lead to OSHA fines and other enforcement. Therefore, employers that use or produce polyurethane polymers should plan ahead and determine now whether they adequately protect workers from occupational exposure to isocyanates. Deficiencies should be corrected immediately. Additionally, even though employees of PMA members may have lower isocyanate exposures than others who are included in this national emphasis program, the potential for and implications of an OSHA official inspecting your workplace should not be ignored or minimized.

"Isocyanates" means all chemicals with two or more isocyanate groups. The most commonly used diisocyanates include methylenebis(phenyl isocyanate) (MDI) and toluene diisocyanate (TDI). Polyisocyanates are also used widely. Isocyanates react with compounds containing alcohol groups to produce the polyurethane polymers that are components of polyurethane products, including flexible and rigid foams, fibers, surface coatings, elastomers, insulation, automobile industry products (such as car seats), foam mattresses, packaging materials, polyurethane rubber, adhesives, and building insulation materials. Furthermore, spray-on polyurethane products are used in retail, commercial and industrial settings to protectively coat cement, wood, fiberglass, steel, and aluminum. Because a wide variety of products contain polyurethane, a large number of employees could be exposed to isocyanates in the workplace.

Respiratory disease among workers exposed to isocyanates has been recognized for over half a century and has resulted in death in some cases. Isocyanates irritate mucous membranes (of the eyes, nose and throat) and the gastrointestinal and respiratory tracts. Workers who are exposed to isocyanates can suffer serious health problems stemming from allergic cross-sensitization, occupational asthma, dermatitis, bronchitis, and hypersensitivity pneumonitis.

Consequently, OSHA's new National Emphasis Program - Occupational Exposure to Isocyanates (Directive Number CPL 03-00-017) took effect June 20, 2013 to protect workers in general, construction and maritime industries from the serious health effects caused by occupational exposure to isocyanates. According to the National Institute for Occupational Safety and Health ("NIOSH"), "[p]reventing exposure to isocyanates is a critical step in eliminating the health hazard. Engineering controls such as closed systems and ventilation should be the principal method for minimizing isocyanate exposure in the workplace. Other

controls, such as worker isolation and personal protective clothing and equipment are also recommended. Early recognition of sensitization and prompt and strict elimination of exposures is essential to reduce the risk of long-term or permanent respiratory problems for workers who have become sensitized."

OSHA's program combines enforcement (inspection targeting) and outreach to employers (letters, speeches, training sessions, news releases, and compliance assistance) to raise awareness of the health effects associated with occupational exposure to isocyanates. The site selection system targets multiple industries and focuses on evaluating inhalation, dermal, and other routes of occupational exposure to isocyanates. Appendix A to the OSHA Instruction on the new program lists industries where: isocyanate exposures are known to occur; exposures exceed an OSHA permissible exposure limit ("PEL") or occupational exposure limit ("OEL"); and, worker illnesses are associated with occupational exposure to isocyanates. Upon request, OSHA will also prepare a master inspection list for each state plan office. Some establishments targeted for inspection under the isocyanates national emphasis program also may be selected under OSHA's current Site-Specific Targeting Plan, other national emphasis programs, and/or local (state) emphasis programs.

During a program inspection, OSHA will review the employer's injury and illness records to determine whether those related to isocyanate exposure were recorded and will interview employees to determine if there are unrecorded cases. Where potential exposures to isocyanates exist, OSHA will evaluate engineering, administrative and work practice controls and personal protective equipment ("PPE"). Additionally, OSHA will collect personal air samples and perform wipe sampling. Inspectors will also check for visible surface contamination, conduct dermal sampling if visible surface contamination is observed, and conduct wipe sampling of PPE. OSHA also will evaluate use of appropriate PPE, eye/face protection, respiratory protections, and chemical-resistant gloves. Other standards for which compliance will be evaluated include hazard communication, housekeeping, and flammable and combustible products.

OSHA likely will issue a serious citation if inhalation exposure to isocyanates exceeds the OSHA PEL and will issue an additional serious citation if feasible engineering/administrative controls were not used or were ineffective. If exposure exceeds an OEL but is less than a PEL, then OSHA is unlikely to issue a citation. On the other hand, OSHA will consider exceedances of an OEL (where there is no established PEL) under the General Duty Clause. Citations also will be issued under applicable PPE regulations. And, because OSHA does not set limits for surface contamination with or dermal exposure to isocyanates (despite indications that dermal exposure is "at least as likely" as inhalation exposure to induce asthma), if wipe samples reveal surface contamination or dermal exposure, OSHA may issue citations under its PPE or housekeeping standards. If OSHA does not issue a citation, it can still issue and follow up on a Hazard Alert Letter. Additionally, OSHA will conduct follow up inspections to determine whether employers have eliminated hazards or reduced exposures below a PEL or OEL.

As OSHA accelerates its inspections under the its new National Emphasis Program - Occupational Exposure to Isocyanates, employers should be aware of the importance of minimizing exposure to isocyanates. If you have any questions about the new program, reducing

worker exposures to isocyanates, or preparing for an OSHA inspection, please contact PMA at _____.

References:

OSHA: Isocyanates, <https://www.osha.gov/SLTC/isocyanates/index.html>.

OSHA Trade News Release,
https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=24273

OSHA Instruction, Directive Number CPL 03-00-017, National Emphasis Program - Occupational Exposure to Isocyanates, https://www.osha.gov/Postdoc/Directive_pdf/CPL_03-00-017.pdf.

Workplace Safety and Health Topics: Isocyanates, <http://www.cdc.gov/niosh/topics/isocyanates/>.

OSHA's NEP on Isocyanates, https://www.osha.gov/OshDoc/Directive_pdf/CPL_03-00-017.pdf.