



Health Risks Associated with Auto Body Painting Materials

The Delaware Department of Labor administers OSHA's On-site Consultation Program, the agency's primary program for providing small business owners **FREE AND CONFIDENTIAL** safety and health consultation services. The services help businesses address hazards and improve workplace safety and health **without fear of citations or monetary penalties**. These programs are funded by OSHA and run by State grantees that are highly trained and knowledgeable about the needs of the small businesses we serve. State grantee for Delaware employers is the Delaware Department of Labor.

On-site Consultation Video Link: <https://dia.delawareworks.com/osha-consultation/#embed1>

Auto body and paint shops use caustic, flammable and carcinogenic chemicals in their line of work, more than in the automotive repair trade. The health risks associated with auto body painting materials can be long-lasting and serious to the employee, and even customers, if the proper steps to implement safety precautions and certified equipment are not enforced. Every person entering or in the auto body paint trade, including current employees, should be aware of the numerous health risks they face each day.

Flammable Substances and Burns

Automotive paint prepared with reducers and lacquer thinner pose flammability issues when sprayed, spilled or in any way aerated to the atmosphere. Cleaning solvents (isocyanates), kerosene, acetone, gasoline and other petroleum-based and alcohol cleaners are combustible, especially under pressure from spray guns and aerosol cans. Without proper ventilation, airborne solvents and reducers ignite in open air by any spark source. Orbital sanders, automotive ignition, grinding wheels and oxygen-acetylene welders provide ignition sources for combustion. Rags and towels that have been improperly stored can ignite by spontaneous combustion or static electricity. Flammable explosions can cause severe skin burns, blindness and traumatic concussion.

Airborne Sanding Particles

Body and painting refinishing techniques use abrasive sanders and grinders to smooth and refinish metal and painted surfaces. Sanding discs produce microscopic abrasives of silica, rust, and methylene chloride, along with chromium and lead that comes from sanding coat-painted surfaces. These fine dust particles become airborne and, without proper ventilation, linger to be inhaled by shop personnel. Inhaling such particles for even short terms can cause asthma, emphysema and other lung-related diseases and irritation. Shop personnel should always wear respirators and eye protection when sanding and grinding bare metal or painted surfaces.

Airborne Paint Vapors and Chemicals

Auto body painters are at risk of inhaling isocyanates, which include two-part coatings, paints and paint pigments that use a hardener in combination with a catalyst. Sprayed airborne paint chemicals include chromium, cadmium and lead. Primer and sealer paints contain aliphatic isocyanates and ethyl acetate. Clear coat paints contain toluene, petroleum naphtha and mixed dibasic esters. Metal cleaning and body trim work contains epoxy resins, methylene chloride, styrene and adhesive fumes. All of these airborne chemicals can cause respiratory inflammation or disease, as well as skin rashes and inflammations, allergic reactions, nerve and brain damage, nausea, organ failure, headache and vomiting.

Impact Dangers and Blindness

Auto body and paint workers use high-speed rotational tools for sanding, grinding and refinishing. Drills, orbital sanders, buffers, sand and bead-blasters, and air compressor nozzles can eject or throw metal or soft objects into the eyes of the worker. Orbital sanders and wire wheels can throw high-speed objects into the face or the body, causing eye injury or blindness. Approved safety goggles negate this hazard.

Welding Fumes

Stainless steel welding gives off toxic fumes, resulting from residual cleaning chemicals and surface paint chemicals, including primers, and oxidized-heated metals. Such dispersed chemicals include chromium, nickel, manganese, iron and arsenic. The heavy metals in particular cause nerve and body organ damage over long exposure periods and, in some cases, immediate harm if the exposure is heavy and concentrated.

Direct Chemical Contact

Most of the chemicals associated with the auto body paint trade produce harmful and destructive results in direct contact with the skin. Cleaning solvents, when in contact with hands and arms, become absorbed into the skin and the bloodstream. These caustic chemicals produce the same ailments, reactions and diseases experience by inhalation, but at a faster rate. Such chemicals produce reddening of the skin, eye-watering, sinus problems, rashes, blisters and first or second-degree skin burns. Every auto body paint worker should use the certified safety equipment in his shop at all times. Such protective wear includes helmets or hats, thick coveralls, gloves, safety goggles, respirators or particle masks and steel-toe regulation boots.

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