



CHESS, Inc.  
7060 Valley Creek Plaza #115-108  
Woodbury, MN 55125  
Ph: 651-481-9787  
[www.chess-safety.com](http://www.chess-safety.com)

Complete Health Environmental and Safety Services

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## Hand in Glove

Complete Health, Environmental, and Safety Services, Inc.  
Janet L. Keyes, MS, CIH and Carol A. Keyes, MA, CSP

Winter's coming. I'm going to start wearing gloves every day. Could I use those gloves for protection against paint thinner or motor oil? Of course not – they're not made for that purpose. My warm insulated leather gloves would just soak up the oil or thinner, holding it against my skin and increasing contact. Everyone knows that.

What everyone doesn't know is that even rubber gloves don't protect against all chemicals. And to complicate matters, there are different types of rubber gloves. Gloves could be made of natural rubber, of butyl rubber, of latex or nitrile or neoprene or polyvinyl chloride or polyvinyl alcohol or.... Each of these different materials works against some chemicals, and fails miserably against others.

Gloves don't all fail in the same way. Some chemicals degrade the material - the glove starts to fall apart. Toluene, used in nearly all paint thinners, does that to nitrile gloves. Chemicals can also permeate the material, passing through with no apparent damage. That's what happens when you use natural rubber latex gloves with isocyanates, the active ingredient in hardeners and activators. The gloves don't *look* damaged. But they aren't providing any protection.

Take a look at that box of thin surgical-type gloves sitting on your stockroom shelves. What's it made of? How thick is it? It might be natural rubber latex. These gloves provide great feel and dexterity. They work pretty well against acids and alcohols – but they're lousy for organic solvents, such as styrene (found in body filler) or toluene. They let isocyanates pass right through. And some people can develop allergies to latex. We don't like seeing these gloves in our clients' shops. They're cheap, but they're not effective.

Are those gloves nitrile, instead? They might still be surgical type gloves, great for dexterity. Nitrile gloves aren't quite as flexible as natural rubber latex gloves. When latex gloves get a small tear, they'll somewhat self-seal. Nitrile gloves will tear completely. They'll work well against oils, greases, and antifreeze, and will block isocyanates. But they won't hold up well against styrene or toluene. Thicker nitrile gloves might not disintegrate immediately from contact with toluene in thinner, but they won't last long.

What will work for paint thinner? It's such a common chemical blend that it really seems like someone should make a good glove just for that. I wish. Toluene, the most common solvent in thinner, is one of the toughest challenges for gloves. If you have very little direct contact with the solvent, heavy nitrile gloves might suffice for a short time. Better choices: Viton, PVA, or a foil laminate glove. But Viton gloves cost around \$70 or more a pair. PVA are polyvinyl

alcohol – one-third the price, but they dissolve in water. Even sweat can degrade them. Foil laminate gloves such as Silver Shield® or Barrier® are about \$10 a pair. The main problem with them is a lack of dexterity. They're not form-fitting and they can be slippery. That can be addressed, in part, by wearing a thin glove over them.

Where does that leave you?

For mechanical shops, thin nitrile gloves are great. They may not come far enough up the arm to be really good choices for cleaning parts (get a longer nitrile glove for that). But they'll do a good job against nearly all the chemicals mechanics encounter, they'll provide enough dexterity to pick up the tiniest parts, and they're inexpensive.

For collision repair, the choice gets harder. We think natural rubber latex gloves are the worst choice, because isocyanates penetrate them with no apparent damage. Thin nitrile gloves keep hands clean and block isocyanates, but they don't hold up to body filler (styrene) or thinner. The gloves that do work against thinner are pricey and bulky. So our recommendations: look at using cleaning methods, such as automatic gun washers, to minimize contact with these chemicals. If you have just occasional contact, try thicker nitrile gloves (15 mil or more). If those don't hold up, go with the foil laminate gloves.

If you have questions about skin safety and gloves, workplace safety rules, or other safety issues, contact CHESS at 651-481-9787; toll free at 877-482-4377, or [carkey@chess-safety.com](mailto:carkey@chess-safety.com).

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