

US EPA ARCHIVE DOCUMENT

RESPIRATORY PROTECTION

Because potential occupational exposures can exceed OSHA PELs during spray painting operations, respiratory protection is normally required for spray operations. Many types of respirators are available for such operations such as half-face air purifying, full-face air purifying, and airline (supplied air). If properly selected and used respirators can help reduce worker exposure when other means of control are not feasible. The selection of a respirator is usually based on several factors such as the type of chemical exposure, duration of exposure, the physical state of the chemical, and the regulatory standards or recommended exposure guidelines. OSHA standard 1910.134 details specific requirements for respiratory programs that employers must develop if respirators are needed to reduce occupational exposures. Data from a NIOSH study indicates that respirator usage at five of six auto body repair shops evaluated was inappropriate; respirators were in poor shape and not maintained properly, and the shops lacked formal, written respiratory program (Heitbrink, 1996). A second NIOSH study found that in the three autobody shops surveyed, workers used full face air and half face air purifying respirators with organic vapor cartridges and pre-filters designed for paint mists. This study also found that the respiratory protection programs in these three shops were not effective, and were not providing adequate protection to the employees (Heitbrink, 1995). A study of Australian auto body shops indicated that only 32% of the auto body repair workers had half-facepiece air purifying respirators that did not leak (Heitbrink, 1996). As expected, surveys have found that breathing resistance and physical discomfort, such as pressure on the face and head, sweat on the face, and tightness of harness are often cited as the main reasons workers do not use respirators or use them improperly. A trend toward increased use of airline respirators in the auto body repair shops has been reported (Janko, 1992). This type of respirators typically causes less physical discomfort and should offer better protection.

NIOSH considers TDI as a potential occupational carcinogen and recommends that employees reduce worker exposure to the lowest feasible concentration. The use of respirators is the least preferred method of controlling worker exposure. Even as much, NIOSH recommends that only the most protective respirators should be used. These respirators include self contained breathing apparatus with full face pieces that are operated in a pressure demand or other positive-pressure mode or any supplied air respirator with a full face piece operated in pressure demand (NIOSH, 1989).

A respirator manufacturer's representative stated that in his opinion, it is likely that most autobody refinishing shops will have some sort of respirator on-site for refinishing operations. He also believes that the majority of the automotive refinishing shops have no written respirator program, and have not provided respirator training or fit testing for the workers. The larger shops, with annual sales of over one million probably have written respirator programs and more than one type of respirator available for the employees. He stated that his company and its regional distributors do not focus sales on this market segment so specific use data is not available. (Schmidt, 1996)