



# FUME EXTRACTION

HAZARDOUS FUMES IN THE WORKPLACE RESULT IN INCREASED ABSENTEEISM AND EMPLOYEE TURNOVER

## WHY IS FUME EXTRACTION NEEDED?

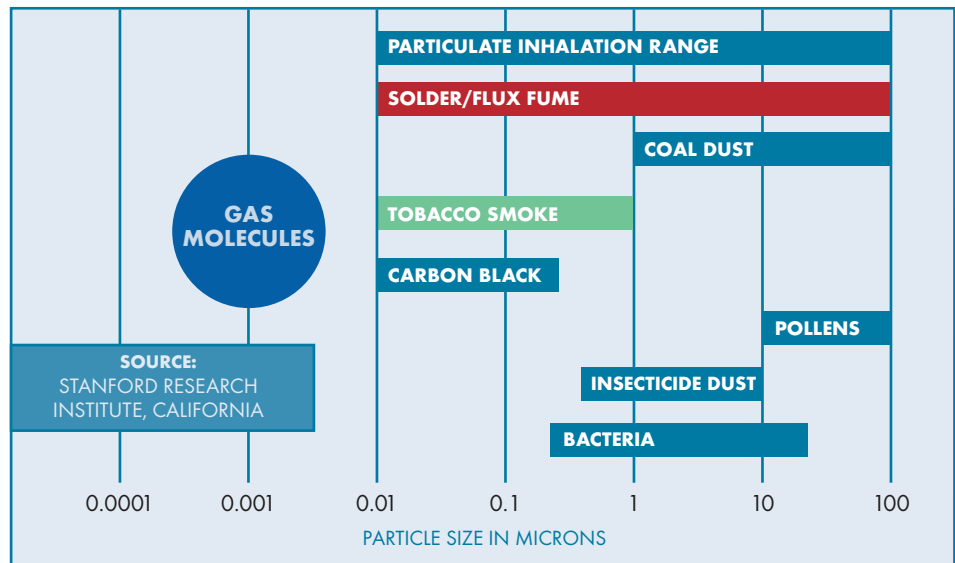
It's a fact... hazardous fumes in the working environment result in increased absenteeism, employee turnover, worker's compensation claims and lost productivity. Medical research has confirmed an increased incidence of occupational asthma, chronic bronchitis, allergic reactions, contact dermatitis and other health related effects associated with exposure to flux fumes. The substances in flux fumes are regulated by international health and safety agencies and many have been designated as Occupational Sensitizers which means that exposure should be eliminated or reduced to as low levels as possible. Where manual soldering is being performed or where solder-pots/fountains are utilized, hazardous fumes are produced and workers need to be protected from them.

## FACT: Exposure to Solder Fumes Leads to Respiratory illness



When rosin-based or rosin-containing fluxes are heated, a substance called colophony is produced, which is one of the major causes of occupational asthma. In order to reduce exposure to colophony, rosin-based fluxes have been exchanged for no-clean or synthetic fluxes that contain no rosin or very low percentages. While this reduces or eliminates exposure to colophony, new chemical irritants may be introduced into the work place, many of which pose a more substantial threat to workers. Over 95% of the total fume products from rosin-based fluxes are in the form of particulates. Chemical exposure from flux fume varies widely and is dependent on the chemical composition of the flux. Non-rosin or low-rosin fluxes use chemically aggressive substances such as acids, solvents, or alcohols in place of rosin to improve the cleaning action of the flux. **This is also true for Lead Free solders.** Exposure to these substances is also recognized as hazardous and when flux is heated, the resultant chemical by-products can be even more hazardous. Additionally, the use of cleaners, solvents or adhesives, which are common in electronic soldering applications, expose workers to chemical hazards.

The human body has been designed with defense mechanisms such as nasal passageways lined with mucus that will collect larger particles through a process known as impaction and ciliated breathing passageways to remove foreign substances from the main airways of the lungs. Flux fumes contain high levels of respirable particles (less than 3.5 microns in diameter similar in size to cigarette smoke) that can bypass these natural defense mechanisms, and deposit themselves in the gas-exchange region of the lungs, thereby posing the greatest exposure hazard.



## FACT: Material Safety Data Sheets for Fluxes Recommend the Use of Local Exhaust Ventilation Systems

The Health effects caused by exposure to flux fumes tend to be forms of respiratory illness and contact dermatitis. However, since the components of flux fume are often designated as occupational sensitizers, chronic or prolonged exposure increases the severity of health effects. PACE Fume Extraction is a key element in protecting workers from being exposed to flux fume!