

## Chemical Sensitizers

Frequently, people speak of being sensitive to, or irritated by, certain types of chemicals. The extent of the sensitivity can vary widely from person to person. There are many things that can determine an individual's reaction to a chemical. According to a publication by The Washington State Department of Labor & Industries (<http://www.lni.wa.gov/wisha/p-ts/pdfs/toxicsubstances.pdf>), these include age, sex, inherited traits, diet, pregnancy, state of health, and use of medication, drugs, or alcohol. Depending on these characteristics, some individuals will experience the toxic effects of a chemical at a lower (or higher) dosage than other people. The publication goes on to say that people may also become allergic to a chemical. These individuals have a different type of response than those who are not allergic. This response frequently occurs at a very low dosage. However, not all chemicals cause allergic reactions. Substances that are known to cause allergies are called allergens, or sensitizers.

A very well documented example of an allergen is formaldehyde. Formaldehyde gas is very irritating. Most people will experience irritation of the eyes, nose, and throat (tears in the eyes and a sore throat) at some level of exposure. All people will experience irritation if exposed to high enough levels. Some persons may be more sensitive to formaldehyde than others and have irritation at low levels of exposure. Formaldehyde also occasionally causes allergic reactions, such as allergic dermatitis or hives.

The Occupational Safety and Health Administration (OSHA) regulates the levels of formaldehyde in the workplace. OSHA Standard 1910.1048 Formaldehyde specifies that formaldehyde in the workplace must not exceed 2 parts formaldehyde per million parts of air (PPM) for a time not to exceed 15 minutes, or not to exceed 0.75 PPM formaldehyde on average for the normal 8-hour workday. The National Institute of Occupational Safety and Health (NIOSH) uses the same definition for time weighted average, but its levels differ. NIOSH defines the maximum average for an 8-hour workday to be 16 parts formaldehyde per billion parts of air (PPB). Since the International Agency for Research on Cancer (IARC) reclassified formaldehyde as a carcinogen, NIOSH recommends limiting exposures to levels below the limit of detection. Currently, there are no government regulations for exposure to formaldehyde in home environments.

### About Prism Analytical Technologies, Inc.

Prism Analytical Technologies, Inc. is a leading consultative air testing laboratory in the United States that is devoted to the chemical identification and analysis of contaminants in the air. We are a recognized leader in the development and deployment of ambient air testing methodologies for Fortune 100 and 500 companies, industrial hygienists, and environmental consultants. Prism's science-based technologies and wide range of air testing support help clients solve indoor air quality, process control, industrial, and environmental challenges.