



# **CAMERON GREAT LAKES, INC.**

## **MOLECULAR FILTRATION SPECIALISTS**

### *A Guide to Hospital Air Quality*



#### **The Challenge**

Maintaining a high quality of air is difficult for all building operators, however when operating in a critical environment such as a hospital, maintaining air quality is a necessity.

Knowing how to provide a proper environment means understanding what problems and potential pollution sources you are up against. One must not only watch for internally generated pollutant sources but must be careful of external pollutant sources. These internal pollutants are often generated by the process and require removal as the effect on the end product may be detrimental. Often times to control internal pollutants, more outside air is introduced to the space. While this might be an acceptable control measure for some buildings, for a critical process it could introduce more potentially harmful contaminants that will ultimately damage your end products or affect test results. In urban areas, outdoor peak levels of ozone, sulfur dioxide, nitrogen dioxide, and hydrocarbons are often 40% to 100% above allowable limits. Hospital with helipads present an even further challenge in that the pad is often on the rooftop near air inlets which then draw in the contaminants of the burning fuel.

#### **The Solutions**

To ensure that air quality is acceptable for both occupants and employees, molecular filtration is your best option. When selecting a molecular filtration system there are numerous options available in both types of adsorbent/chemisorbent media along with the hardware that holds the media. The best selection for your particular application will depend upon a variety of factors.

When looking into a molecular filtration system, items to be taken into consideration include physical space, ease of maintenance, types of contaminants present and concentration, temperature and humidity and the amount of air to be treated. You generally have two choices of media, a standard activated carbon or a blend of carbon and potassium permanganate. The standard activated carbon system will remove ozone, nitrogen dioxide and your higher molecular weight volatile organic compounds. These systems have been successfully used over the years and give you the benefit of regeneration. However, often times there are also many other low molecular weight contaminants present. In this case it is often necessary to combine the carbon with potassium permanganate. The potassium permanganate readily reacts with the low molecular weight contaminants removing them from the air stream giving you an adsorption/chemisorption system that can effectively provide the proper protection you require.

Your molecular filtration specialist at Cameron Great Lakes can assist you in the proper selection of both hardware and media that will be most efficient both in performance and economics. (Please note that this guide offers information on removal of chemical contaminants only.)