



CAMERON GREAT LAKES, INC.

MOLECULAR FILTRATION SPECIALISTS

NOTES ON THE PAPER AND PULP INDUSTRY

The pulp and paper industry is a major user of gas phase filtration media. The driving force is the failure of electronic process control equipment and motor control centers due to corrosion.

The corrosion occurs on the electrical equipment, such as the contacts and electrical leads. It is caused by the presence of airborne contaminants. The most common of these contaminants are hydrogen sulfide, oxides of sulfur, chlorine, and oxides of nitrogen. Temperature and relative humidity also play a roll in the corrosiveness of the environment.

The Pulp and Paper Industry suggests that safe environments for electrical equipment are contaminant levels that range from 0 to 5 ppb total. This is somewhat dependent upon the temperature and relative humidity of the environment and the types of contaminants present. Uncontrolled environments may have levels that are 10 times greater than "safe levels".

Contaminants can enter the space via a number of different means: diffusion through cracks, porous walls and ceilings, diffusion through open doors, contaminants that offgas from clothing of personnel entering the space, internally generated contaminants, and displacement during opening and closing of doors.

When designing a new room these should be taken into consideration. The room should be pressurized with air free from contaminants to 0.05 - 0.09 in. WG and have a capacity for about 4-6 air changes per hour. The room should be equipped with a vapor adsorption system to provide purified air at "safe levels" as listed above. Temperature and humidity control is also required in environments where the temperature is greater than 75° F and the RH is above 60%.

VAPOR ADSORPTION SYSTEM:

Selection of an adsorber system depends upon a number of parameters, including performance and service life. Performance is affected by a number of factors, including media selection and physical integrity of the system. The adsorber must be capable of providing a zero- bypass seal.

Service life is dependent upon the following: types and concentration of contaminants, flow rate, media amount, and bed configuration.

MEDIA SELECTION:

The media of choice is either our CGL/CI OR CGL/ZK6. The CGL/CI is an impregnated carbon that is specifically designed to remove the lighter molecular weight compounds in the air stream, while still maintaining activated carbon's ability to adsorb the higher molecular weight contaminants. The CGL/ZK6 is a potassium permanganate impregnated zeolite. This product also has the ability to remove the lighter molecular weight compounds. The ZK6 media is often used in conjunction with standard activated carbon to provide an efficient media bed.

A combination of good room design and properly specified vapor adsorption system has been proven to be an effective means of corrosion control problems. The end user benefits from decreased down time, reduction in expensive electrical equipment replacement, and increased production.