

TRI Air Testing, Inc. offers the following information to help food and beverage manufacturers and packagers determine their own specifications for analytical testing of air/gas systems to meet current good manufacturing practice, cGMP.

### Need for Testing

Any time there is a possibility of product safety or integrity being compromised by direct or indirect contact with the components and possible contaminants of compressed air/gas those components or contaminants need to be evaluated.

### Evaluation of Compressed Air/Gas Systems

**\*\* (This needs to be done by a competent technical individual that has practical experience with compressed air/gas systems and their capabilities.)**

- First, determine any product specific requirements for the air/gas.
- Second, determine if the product specific requirements for the air/gas system can be met by the system's theoretical capability. If not, the system may need to be redesigned or the specific requirement needs to be adjusted to meet your specifications.
- Third, perform a set of baseline analytical tests on the components and contaminants that are the best fit to measure the system's capability.
- Fourth, write a pass/fail specification for all appropriate component or contaminate requirements that will show if the air/gas system is operating properly to meet the all the product specific requirements.

### Typical Components and Contaminates of Compressed Air/Gas Systems

- Particles may be residual matter from initial installation or generated during use from poor system design or maintenance. **Make sure to blow out the lines prior to using.**
- Oil typically is from oil lubricated air compressor systems where the piston rings allow crankcase oil to enter the air being compressed and the air filtration system is not effectively removing this oil.
- Water vapor typically is from inadequate drying of the compressed air. In poorly designed systems liquid water may be present in the compressed air piping creating corrosion that will generate particles and promote microbial activity.
- Gaseous components typically hydrocarbon including halogenated hydrocarbons that may enter a compressed air intake and without adequate filtration will be with the air stream. Hydrocarbons could be solvent vapors, cleaning materials, or disinfectants.
- Microbial components typically are mold or bacteria. A compressed air/gas system that is kept under pressure and does not have high moisture content will typically not have active mold or bacteria colonies.

