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Oil in Process or Instrument Compressed Air By Dr. Ed Golla, Ph.D, CIH

Process Air and Instrument Compressed Air

Compressed air is required in many applications in the pharmaceutical industry, food industry and for instrument air. Maintenance and product quality are key issues in process air and the air should be tested on a schedule which might include quarterly or semi-annual testing.

Poor air quality adversely affects overall plant operations by increasing operating and maintenance costs. Proper air quality can save a plant money by extending the service life of equipment and increasing system uptime. An air quality test can identify simple maintenance issues like bad piping, filters, separators and driers. Neglecting maintenance can let oil get into the plant air and cause production problems and often requires expensive clean-up procedures. Improve manufacturing and product quality with a compressed air quality test.

Contaminants can enter an air system at the compressor intake, or can be introduced into the air stream by the system itself.

Oil and Particulate can be an issue. Most air compressors use oil in the compression stage for sealing and lubrication. This oil can be carried over into the compressed air

system. Oil can mix with water vapor in the air after being partially decomposed is often acidic, causing damage to your compressed air system. Particulate in compressed air systems can plug orifices of sensitive pneumatic instrumentation, wear out seals, erode system components, reduce air tool efficiency and even reduce the absorptive capacity of desiccant dryers.

Please review your compressed air applications and determine the level of air quality that your plant will require. Higher quality air often requires additional air treatment equipment, which increases capital costs as well as energy consumption and maintenance needs. So, specify high quality air only where it is actually needed.

I recommend developing an air quality program for validation that is repeatable for verification and compliance for FDA enforced cGMP. Compressed or process air lines should be tested on a routine or regular basis. A thorough evaluation of the application and manufacturing process is required to ensure the appropriate solution, both technically and financially.