

## Compressed Air Quality

The type of application for which compressed air is produced, will impact the level of air quality required. For compressed air users in industries such as the; food, beverage, medical and electronics, absolutely oil free, clean – and even sterile - compressed air is a necessity.

### ISO 8573-1

The International Standard ISO 8573-1, defines compressed air purity classes based on the level of three contaminant types - solid particles, water and oil - within the compressed air system. It also provide information on the test methods for measuring these contaminants.

For end users, ISO 8573-1 provides guidelines as to how they can define and quantify compressed air quality.

Class 0 is the most stringent air purity class defined by ISO 8573-1.

ISO 8573-1 defines compressed air as being oil free where the oil content – including oil vapour - is less than 0.01 mg/m<sup>3</sup>.

### How to treat compressed air

Achieving the desired level of air quality may be realised in a number of ways:

#### Lubricated Compressors

With the correct compressed air treatment, it is possible to generate ‘oil-free’ compressed air with a lubricated compressor. However, whether due to inadequate maintenance or component failure, there will always be a small risk of oil contamination to the compressed air network with an oil-lubricated compressor.

#### ‘Oil-free’ Compressors

‘Oil-free’ or ‘dry running’ compressors are designed to compress air without coming into contact with oil. The compression chamber is not lubricated. Instead these compressors will be either air- or water- cooled. This eliminates the risk of oil contamination within the compressed air distribution network.

#### Compressed Air Treatment

Irrespective of type, every compressor will draw in contaminated air. This will pass into the compressed air network if measures are not taken to remove it. All compressed air will therefore require some form of downstream treatment to achieve the desired air quality including;

### **Dryers**

Through various operation principles air dryers are used to remove water vapour from compressed air. The process of compressing air concentrates atmospheric contaminants, including water vapour. Without the removal of this water and contaminants it can lead to condensation of water in piping and compressed air tools and equipment downstream of the compressor.

### **Filters**

Compressed air filters come in various forms to filter different types of contaminants and like dryers are design to remove concentrated particulates and oil odours from the compressed air.

All air treatment components should be selected in accordance with ISO standard ISO8573-1:2010.