THE ABC'S AND 1-2-3S OF AIR QUALITY CLASSES

By David Andrews

With the growing presence and demand for compressors producing Class 0 oil free air, it is easy to get confused regarding how to read, and understand, the ISO 8573-1:2010 Air Quality Classes chart. To truly understand the chart just like the alphabet we begin with our ABC's:

A: Solid Particles: measures the solid particles contained in the compressed air stream. Within this column are three sub-columns indicating the quantity of allowable particles by micron size. The bigger the particle, the fewer parts per million allowed.

B: Pressure Dew Point: measures the maximum allowable water content in the compressed air stream.

C: Oil (including vapor): measures the maximum allowable oil content in the compressed air stream.

AIR QUALITY STANDARDS

ISO 8573-1 CLASSES

Class	A Solid Particle Maximum number of particles per m³			B Pressure Dew Point °F (°C)	C Oil (incl. vapor) mg/m³
	0.1–0.5 micron	0.5–1.0 micron	1.0–5.0 micron		
0	As specified by the end-user or manufacturer, and more stringent than Class 1				
1	≤ 20,000	≤ 400	≤ 10	≤ -94° (-70°)	0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40° (-40°)	0.10
3	—	≤ 90,000	≤ 1,000	≤ -4° (-20°)	1.00
4	—	—	≤ 10,000	≤ 37.4° (3°)	5.00
5	—	—	≤ 100,000	≤ 44.6° (7°)	—
6	—	—	—	≤ 50° (10°)	—

Step 1: Identify your overall compressed air requirements. Does your operation produce food or beverages where the compressed air comes into contact with the finished goods? An oil free compressor is likely a good choice to minimize the chance of lubricant coming into contact with the product.

Step 2: Identify any specific compressed air requirements within your system. For example, are there tools in your operation highly susceptible to moisture? Will the presence of excess solid particles harm your finished goods? Are there gauges and instrumentation sensitive to the presence of contaminants?

Step 3: Identify the air treatment components necessary to meet your air requirements. The major categories of air treatment components include:

- Dryers – most common are refrigerated and desiccant. To learn more about selecting the correct dryer, visit our blog post: How to Choose a Desiccant or Refrigerated Air Dryer.
- Downstream Filters and Mist Eliminators – there are dozens of different options and assortments to help remove contaminants from compressed air. It is important to note the first line of defense against airborne contaminants is the inlet air filter contained within the compressor.

The result? With this information you can specify the compressed air requirements necessary for your operation. For example, let's say after an analysis you determined your air class requirements are:

ISO8573-1 1.4.1

Following the chart, we would see your operation requires solid particles in row 1; Pressure Dew Point of 37.4° F or lower; and total oil including vapor of .01 mg/m3.

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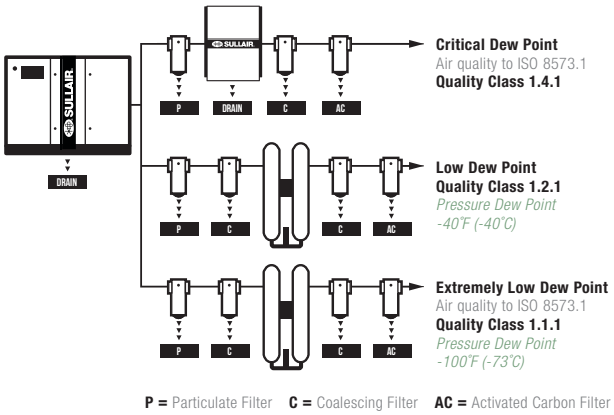

Your local compressed air service partner can play a key role in helping you both understand your air quality requirements as well as the equipment and accessories needed to achieve your goals. For more information check out our previous blog on Choosing the Right Service Provider.

And when you move forward with identifying and understanding your air quality needs, just remember your ABCs and 123s!