ISO 8573-1:2001 Compressed Air Quality Standard

ISO8573-1:2010 CLASS	Solid Particulate				Water		Oil
	Maximum number of particles per m^3			Mass Concentration mg/m^3	Vapor Pressure Dewpoint	Liquid g/m^3	Total Oil (aerosol liquid and vapor) mg/m^3
	0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron				
0	As specified by the equipment user or supplier and more stringent than Class 1						
1	≤ 20,000	≤ 400	≤ 10	-	≤ -100°F (-70°C)	-	0.01
2	≤ 400,000	≤ 6,000	≤ 100	-	≤ -40°F (-40°C)	-	0.1
3	-	≤ 90,000	≤ 1,000	-	≤ -4°F (-20°C)	-	1
4	-	-	≤ 10,000	-	≤ +37.4°F (+3°C)	-	5
5	-	-	≤ 100,000	-	≤ +44.6°F (+7°C)	-	-
6	-	-	-	≤ 5	≤ +50°F (+10°C)	-	-
7	-	-	-	5 - 10	-	≤ 0.5	-
8	-	-	-	-	-	0.5 - 5	-
9	-	-	-	-	-	5 - 10	-
X	-	-	-	> 10	-	> 10	> 10

Chart provided by Domnick Hunter, a division of Parker

Specifying air purity in accordance with ISO8573-1:2010

When specifying the purity of air required, the standard must always be referenced, followed by the purity class selected for each contaminant (a different purity class can be selected for each contaminant if required).

An example of how to write an air quality specification is shown below :

ISO8573-1:2010 Class 1.2.1

ISO8573-1:2010 refers to the standard document and its revision, the three digits refer to the purity classifications selected for solid particulate, water and total oil. Selecting a air purity class of 1.2.1 would specify the following air quality when operating at the standard's reference conditions:

Class 1 Particulate

In each cubic meter of compressed air, the particulate count should not exceed 20,000 particles in the 0.1 - 0.5 micron size range, 400 particles in the 0.5 - 1 micron size range and 10 particles in the 1 - 5 micron size range.

Class 2 Water

A pressure dewpoint (PDP) of -40°F (-40°C) or better is required and no liquid water is allowed.

Class 1 Oil

In each cubic meter of compressed air, not more than 0.01mg of oil is allowed. This is a total level for liquid oil, oil aerosol and oil vapor.

ISO8573-1:2010 Class zero

- Class 0 does not mean zero contamination
- Class 0 requires the user and the equipment manufacturer to agree contamination levels as part of a written specification
- The agreed contamination levels for a Class 0 specification should be within the measurement capabilities of the test equipment and test methods shown in ISO8573 Pt 2 to Pt 9
- The agreed Class 0 specification must be written on all documentation to be in accordance with the standard
- Stating Class 0 without the agreed specification is meaningless and not in accordance with the standard
- A number of compressor manufacturers claim that the delivered air from their oil-free compressors is in compliance with Class 0
- If the compressor was tested in clean room conditions, the contamination detected at the outlet will be minimal. Should the same compressor now be installed in typical urban environment, the level of contamination will be dependent upon what is drawn into the compressor intake, rendering the Class 0 claim invalid
- A compressor delivering air to Class 0 will still require purification equipment in both the compressor room and at the point of use for the Class 0 purity to be maintained at the application
- Air for critical applications such as breathing, medical, food, etc typically only requires air quality to Class 2.2.1 or Class 2.1.1
- Purification of air to meet a Class 0 specification is only cost effective if carried out at the point of use