

# *Compressed Air Quality*

*Class 0 Oil-Free Air for Pharmaceutical Applications*



# The freedom of oil-free

## How pure is your air?

In 2001, the International Standards Organization (ISO) established a new class of air quality for pharmaceutical manufacturers with the highest standards. The standards were updated in 2010. Class 0 is the most stringent air quality class, limiting oil contamination in liquid, aerosol and vapor forms.

### ISO 8573-1:2010 Air Quality Classes

Quality Class	Solids			Water		Oil & Oil Vapor
	Max Number of Particles per m <sup>3</sup>			Pressure Dew Point		mg/m <sup>3</sup>
	0.1-0.5 micron	0.5-1 micron	1-5 micron	°F	°C	
<b>0</b>	<b>As specified by the end-user or manufacturer, and more stringent than Class 1</b>					
1	≤ 20,000	≤ 400	≤ 10	-100	-70	0.01
2	≤ 400,000	≤ 6,000	≤ 100	-40	-40	0.1
3	—	≤ 90,000	≤ 1,000	-4	-20	1
4	—	—	≤ 10,000	37.4	3	5
5	—	—	≤ 100,000	44.6	7	—
6	—	—	—	50	10	—



### Ingersoll Rand is committed to providing 100% oil-free air.

All Ingersoll Rand oil-free technologies have earned Class 0 certification through rigorous testing by TÜV Rheinland®, a global leader in independent testing and assessment. With Ingersoll Rand, you can enjoy the peace of mind that comes with knowing your compressed air is completely free of compressor-created contaminants.

## How does compressed air quality affect your production lines?



### Tablet Production and Coating

Compressed air is frequently used to de-dust tablets and spray on tablet coatings. Class 0 100% oil-free air ensures higher product purity and eliminates the risk of rejections and/or health risks associated with oil contamination.



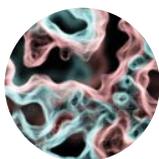
### Mixing and Holding

Compressed air is used to maintain over-pressurization on mixing and holding tanks to ensure product integrity/sterility. Class 0 100% oil-free air prevents the risk of oil contamination damaging this delicate balance.



### Product Filling, Packaging and Bottling

Compressed air often has direct contact with the product and/or package during filling/dosing, blister packaging and bottling. Class 0 100% oil-free air prevents oil contamination from being transferred directly to the product.



### Aseptic Applications

Whenever your application demands aseptic air, it demands Class 0 100% oil-free air. Oil contamination can prevent high efficiency particle filters from performing effectively. Class 0 100% oil-free air ensures consistently sterile air.

## Compressed air regulations

Section 820.70 (e) of Title 21 of the Code of Federal Regulations set by the FDA states that “each manufacturer shall establish and maintain procedures to prevent contamination of equipment or product by substances that could reasonably be expected to have an adverse effect on product quality.” Ingersoll Rand Class 0 oil-free compressed air technologies help pharmaceutical manufacturers adhere to this regulation by ensuring production processes remain 100% free of compressor-created contaminants.

Ingersoll Rand also offers compressed air system audits that align with GMP requirements and PAT initiatives. Our innovative Intellisurvey tool allows us to monitor and analyze current air system performance in order to determine solutions that will maximize system reliability and efficiency.

