



## Production of Oil-free Compressed Air

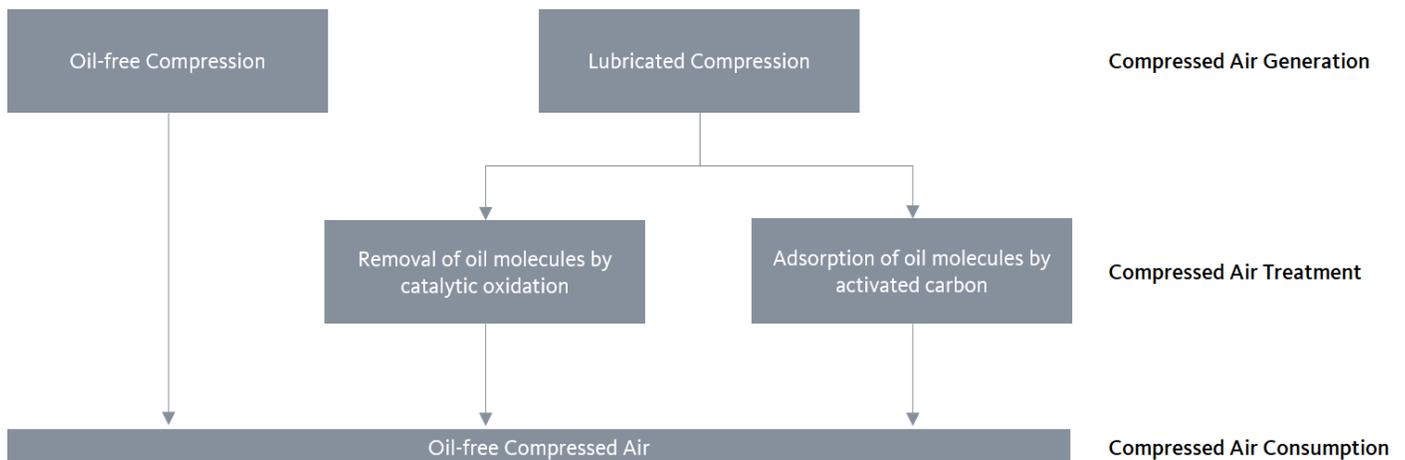
The ISO 8573 standard was created to provide an international standard for the quality of compressed air. Part 1 of the standard specifies the purity classes of compressed air.

One important aspect within the standard is contamination with oil, which includes all hydrocarbons with six or more carbons in the molecular chain. To meet the requirements for quality class 1, the oil content must be less than or equal to 0.01 mg of oil per cubic meter, or 35 cubic feet, of expanded compressed air. This oil content includes hydrocarbons in liquid, aerosol, or vapor form.

### Compressed Air Purity Classes for Total Oil

| Reference Conditions: air temperature 68 °F, absolute pressure 14.5 psi, and relative water vapor pressure 0 psi |  |
|--|--|
| Class  | Total Oil (liquid, aerosols, and vapor)  |
| 0  | As specified by the equipment user or supplier and more stringent than class 1 |
| <b>1</b>   | <b>≤ 0.01 mg/m<sup>3</sup></b>   |
| 2  | ≤ 0.1 mg/m <sup>3</sup>  |
| 3  | ≤ 1.0 mg/m <sup>3</sup>  |
| 4  | ≤ 5.0 mg/m <sup>3</sup>  |
| X  | greater than 5.0 mg/m <sup>3</sup>   |

To produce oil-free compressed air, users essentially have three options: oil-free compressors, compressed air purification by means of activated carbon or by treatment using a catalytic system.



When opting for oil-free compression, one needs to keep in mind that oil-free compressors work with ambient air that already tends to be contaminated. As a result, the compressed air may contain substances from the exhaust from car engines or heating systems in an even higher concentration than originally found in the ambient air. This often leads to an oil content greater than 0.01 mg per cubic meter, which is class 2 or higher. Where higher compressed air purity levels are required or constant purity levels maintained, then oil-free compression alone is not the solution, as the compressed air still must be treated.