



# ISO 8573 IN THE FOOD AND BEVERAGE INDUSTRY



TRI AIR TESTING



## COMPRESSED AIR TESTING

Quality • Safety • Compliance

## UNDERSTANDING ISO 8573: FOOD & BEVERAGE

### Compressed Air Testing Options

ISO 8573-1 is used by some food and beverage plant engineers and facility managers to access the quality and verify the safety of compressed air for use in product manufacturing and packaging. With an umbrella of multiple sections and classes of requirements, the ISO standard can be used as the basis to define the appropriate and essential compressed air quality needs of food and beverage operations.

Through its use, a company can meet the requirements of the Safe Quality Food (SQF) and/or the Food and Drug Administration's (FDA) laws, rules, and guidance as listed in Current Good Manufacturing Practice (cGMP), or the Food Safety Modernization Act (FSMA).

- Moisture
- Oil
- Mold
- Particles
- Hydrocarbons
- Bacteria

For the food & beverage industry, TRI's 40+ years experience delivers scientifically accurate test equipment and laboratory protocols for compressed air quality lab reports. Nearly all test results are available to customers within 24 hours of sample receipt at our laboratory, via secure, online access to TRI's [MyAir](#) system.

### Which ISO Level Is Right for You?

ISO 8573 offers multiple air classes. Food and beverage operation, which by the nature of their operations may use varying levels of powders, oils, water, and other particles (e.g., spices), should select a class of air that is appropriate to their facility rather than selecting the highest possible class. An example is in ISO 8573 section 5.2 Particles. In many cases, measuring particle size and count as listed in Classes 1 through 5 are not necessarily meaningful in the goal of providing compressed air that is safe for the operation. Providing compressed air that has many thousands of times fewer particles than the air in the room where the product is processed doesn't necessarily improve the quality of the end product. Also, measuring the stringency of these classes might not even be possible at a food and beverage facility without specialized equipment and trained technicians onsite.

TRI offers Class 6 testing results of  $<5 \text{ mg/m}^3$  and regularly provides 50 times lower results such as  $<0.1 \text{ mg/m}^3$  to meet customer needs.

The ISO standard was not created specifically for food and beverage operations. It is deliberately broad. Microchip manufacturing requires very different air from potato chip manufacturing. A food and beverage facility can have safe, compliant, air without having semiconductor-quality clean room air.

**Custom specifications and non-spec analytical reports** rooted in ISO 8573-1 are available. These reports provide confidence, guidance, and documentation towards compliance without your facility setting an unachievable compressed air quality and usage target. Please contact TRI for more information about our testing services and sampling and analytical procedures, so your company can decide whether they are right for your needs.



### PRACTICAL ISO 8573-1:2010 COMPRESSED AIR/GAS TESTING GENERAL GUIDELINES AND TESTING

ISO8573-1:2010 SECTION IF APPLICABLE	TESTING DESCRIPTION	DIRECT PRODUCT CONTACT	INDIRECT PRODUCT CONTACT	VIABLE MICROBIOLOGICAL
↓	↓	ISO 8573-1 [6:2:3]+Gases	ISO 8573-1 [6:4:3]+Gases	Non-ISO 8573-1 Methodology
5.2 Particles	Solid Particles by Mass	$\leq 5 \text{ mg/m}^3$ Class 6 <b>Note 1</b>	$\leq 5 \text{ mg/m}^3$ Class 6 <b>Note 1</b>	NA
5.3 Humidity	Pressure Dew Point	$\leq -40^\circ\text{F}$ @100psi Class 2 <b>Note 2</b>	$\leq 37^\circ\text{F}$ @100psi Class 4 <b>Note 3</b>	NA
5.4 Oil	Liquid or Aerosol Oils (oil mist) by Mass	$\leq 1 \text{ mg/m}^3$ Class 3 <b>Note 4</b>	$\leq 1 \text{ mg/m}^3$ Class 3 <b>Note 4</b>	NA
5.5 Gaseous Contaminates	Gaseous Hydrocarbons	$\leq 2 \text{ ppm}$	$\leq 5 \text{ ppm}$	NA
	Halogenated Hydrocarbons	$\leq 1 \text{ ppm}$ <b>Note 5</b>	$\leq 5 \text{ ppm}$ <b>Note 5</b>	
5.6 Microbiological Contaminates	Enumeration of Mold and Bacteria (cultured in lab after collection)	NA	NA	$\leq 50 \text{ cfu/m}^3$ <b>Note 6</b>
TRI Air Testing Test Item # →	No Specification Comparisons on Analytical Report. (Baseline)	IND	INI	MI
TRI Air Testing Test Item # →	Specification Comparisons on Analytical Report	ISD	ISI	NA

[Click on notes to open the full ISO Practical Compressed Air Testing document.](#)

## COMPRESSED AIR TESTING KITS

### Collecting & Testing Samples

For more than 40 years, TRI Air Testing has developed scientifically accurate, user-focused air testing kits for diverse industries. TRI's compressed air testing kits are developed with detailed awareness of user needs, the location at which samples must be collected, the types of compressors being used, the volume of sample needed, etc.

- **No training needed** to use these kits
- Kits are available for rental or purchase
- Results available within 24 hours
- Secure, online access to reports, orders, and online payments via [MyAir](#)
- Lifetime warranty and free annual quality check for all purchased kits

TRI has a network of dealers and contacts if you need on-site testing technicians or specialized equipment. Contact TRI for details.

View kit demonstrations at [www.airtesting.com/air-test-kits](http://www.airtesting.com/air-test-kits).

Comparison Chart			
	OPTION A: The Compressed Air Sampling Kit	OPTION B: The Champion 35 Test Kit	OPTION D: The Champion 35 Cylinder Kit
PURCHASE			
LOAN	●	●	●
PROCESS AIR: FOOD, PHARMA, MEDICAL			●
INDUSTRIAL BREATHING AIR	●	●	

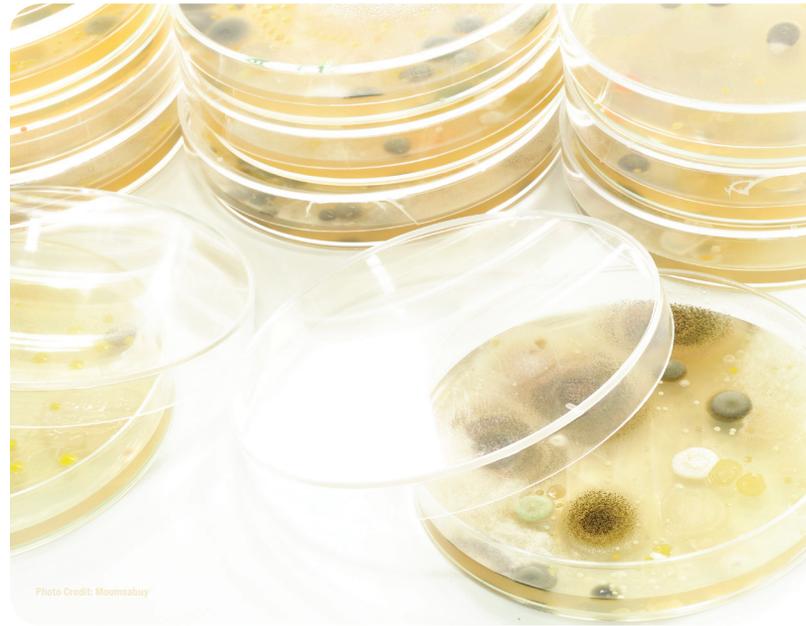


Photo Credit: Moonsabay

### Microbiological Testing

Mold and bacteria testing is available for compressed air systems. TRI's methodology, supported by AIHA-accredited expert partners, uses PVDF filters (0.22 micron pore size membrane) without any embedded growth nutrients. Culture media are 2% malt extract agar (MEA) and, for bacteria, tryptic soy agar (TSA). Typically, one cubic meter of air is run through the filter to obtain the proper sample.

- Fungi-Genus identification and enumeration of culturable filamentous fungi
- Bacteria-Genus identification and enumeration of predominate three culturable bacteria
- Individual enumeration of yeast

**NOTE:** The TRI mold and bacteria sampling and analysis methodology is not appropriate for all operations and systems. Please contact TRI for more information so your company can decide whether this analytical procedure is right for your needs.

*Every facility has different compressed air quality needs. Third-party independent testing of compressed air helps determine the right ISO 8573 class of air for your operation.*

## EXCELLENCE IN QUALITY AND SCIENCE

TRI Air Testing Inc., an AIHA-LAP, LLC accredited-laboratory, specializes in compressed breathing air quality testing, medical gas testing, and manufacturing air quality for pharmaceutical, food/beverage and medical device. Our patented air/gas sampling equipment was designed originally for the U.S. Navy Diver's air sampling. TRI's sampling system employs a method that lowers the pressure of both high pressure and low pressure air supplies to < 3 atmospheres absolute pressure, which in turn reduces the size and

weight of the equipment and containers needed to obtain accurate samples. TRI currently holds the U.S. Navy Divers air sampling contract called the Defense Compressed Air Testing (DCAT) Program.

TRI Air Testing also maintains an international dealer network, supporting compressed air testing throughout North America, Australia, and Europe. Contact our team to find the dealer nearest you or to discuss services available in your region.



### SHIPPING ADDRESS

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