

## Leak Detection Fundamentals:

# The Importance of Leak Testing in One-Step Stretch Blow-Molded PET Containers

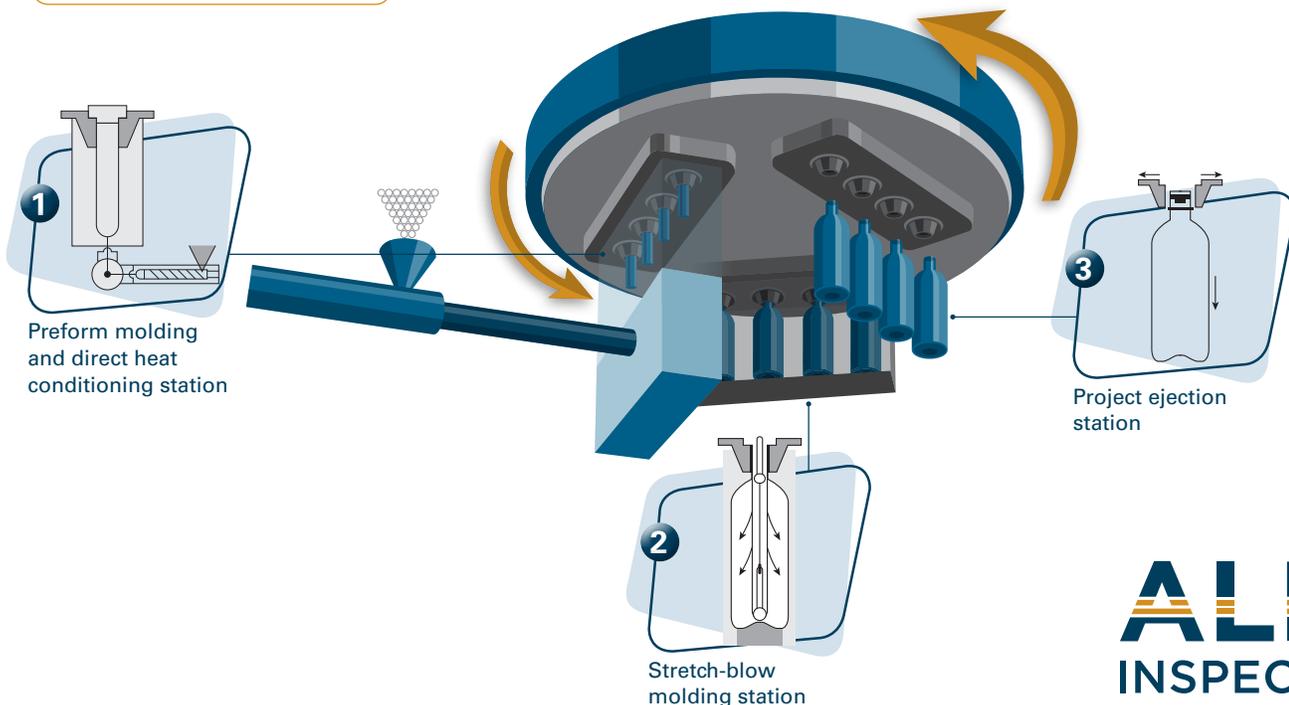
Maintain your productivity and profit by ensuring your containers are produced quickly and free of defects

PET (polyethylene terephthalate) is a clear, strong, lightweight plastic of the polyester family that is extremely versatile and easily recyclable. Because it is inert, it is an excellent choice for food and beverage and pharmaceutical containers.

### Production Methods

There are two main molding methods used in the production of PET containers: 1-step and 2-step. The 2-step method requires two separate machines, one that injects material into a form and a second that uses stretch blow molding to achieve the final shape. PET is a material commonly used in 1-step fabrication, a method that requires only one machine to take the initial material from raw form to its final shape. There are two common platforms for the 1-step method, a triangular system (figure 1) or a square system (figure 2). The 1-step method is particularly beneficial in producing unique shapes and also delivers savings in floor space and production time.

Figure 1: 1-Step Triangular System

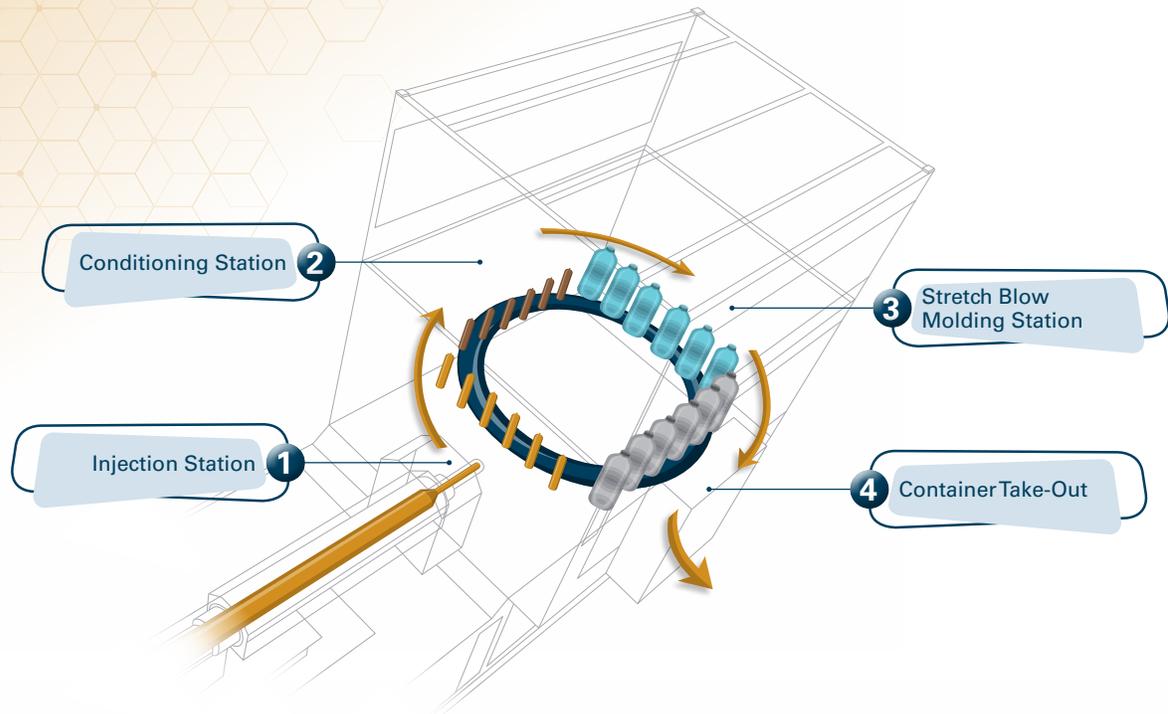


**ALPS**  
INSPECTION

### Fundamental Fact

Integrating leak inspection into your production line can deliver even greater gains. In-line leak testing can help identify production problems earlier, preventing waste and saving time and money. And because every container is tested, in-line inspection protects you from random quality issues, helping you achieve a higher assurance of quality for every container you produce.

Figure 2: 1-Step Square System



To maintain productivity and profit, manufacturers must find ways to ensure containers are produced quickly and free from defects. Integrating leak testing into the production line is an excellent way to maximize warehouse floor space while ensuring quality in every container that leaves the line, protecting your reputation through quality assurance.

### Why Leak Test?

Despite their durability, PET containers can have manufacturing defects that lead to product leaks or contamination once the containers are filled. Common leak defects in PET containers fall into three main categories: sealing-related defects, holes, and height or toplload flaws. Other physical defects, such as flashing, charring, or thread malformations, can also occur.

### Benefits of Leak Testing

Defective containers that go undetected can result in leaks, contamination, and other quality issues once filled. Providing packaging of consistent, high quality protects your reputation as a supplier, as well as the reputation of your end user; it also protects your financial investment by preventing waste and protecting inventory.



Common PET Bottle Types



Leak testing is increasingly the industry standard. Leak detection systems can inspect up to several thousand bottles per hour, ranging from small vials to gallon-sized containers. A functional test using pressure decay technology verifies that each container will seal and hold pressure.

Leak testing also protects your financial investment in the form of inventory. Container inventory volumes can be high, including containers in your warehouse and those en route to the end user and in the end user's warehouse. If the quality of every container cannot be assured, product may be refused or destroyed. Ensuring consistent quality is key to protecting your inventory and the investment it represents.

### How Can ALPS Help?

No matter the type of container you produce, leak testing helps protect you and your clients from defects that can result in damaged products and damage to your brands. When you incorporate ALPS leak detection equipment into your production line, you ensure that each container leaving your line is of the highest integrity. ALPS equipment is designed to make leak testing easy and automatic, by integrating seamlessly into your production line and providing options to meet any number of specifications across container shape and size, testing methodology, and line speed. The ALPS team also has the engineering expertise to help ensure the equipment you choose is designed to align with your needs:

- **Testing Speeds**

Whatever your production line's speed, ALPS has an inspection solution to fit your needs.

- **Container Specifications**

From single-head linear to multi-head rotary systems, testing small vials or gallon-sized jugs, ALPS offers equipment options to address to the size and shape of each container produced.

- **Hole Size Sensitivity**

ALPS can test for defects as small as .004 " (0.1 mm) and as large as 0.020 " (0.51 mm). Customization for detecting leaks outside this range may be possible.

Look to ALPS for expert advice and state-of-the-art leak inspection solutions that seamlessly integrate into your PET molded packaging line.

Visit us online at

[www.alpsleak.com](http://www.alpsleak.com)

or contact us today at

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