



# TapTone

## APPLICATION NOTES

News and information from Teledyne TapTone, a leader in the package inspection industry.

### LEAK DETECTION ON PLASTIC EDIBLE OIL BOTTLES

**Tested:** Edible Oil in Clear Plastic Bottles

**Inspection Desired:** Processors who supply vegetable and other consumable oils to retailers are keenly aware that one leaking container can cause the rejection and return of an entire pallet. These returned goods are costly to the processor in terms of waste and retailer fines. The T4000-C Compression Sensor is ideal for finding leaking containers before they leave the processing plant.

**Tested with:** TapTone T4000-C Compression System



[Edible oil in plastic containers](#) ►

### TECHNOLOGY CORNER *HOW IT WORKS*

The T4000 Compression technology is used to find leaks in flexible containers. As a container passes through the system, dual parallel belts apply force to the sidewalls of the container. This action compresses the headspace of the container, which allows a load cell to take a force measurement at the discharge of the system. Utilizing DSP technology, the controller analyzes the measurement and assigns a merit value to each container. If the merit value is outside of the acceptable range, a reject signal activates a remote reject system.

[T-4000 Controller and Compression Sensor. Sensor has a cantilever design that suspends over the existing conveyor.](#) ►



## TEST

The test on plastic edible oil bottles was performed as follows:

- Setup the compression belts to the flat area of the bottle with a slight compression in this area.
- Created leaking containers and recorded data. For this test, leaking containers were created by inserting calibrated leaks in the cap of .010" and .020" (.254mm and .508mm) in diameter.

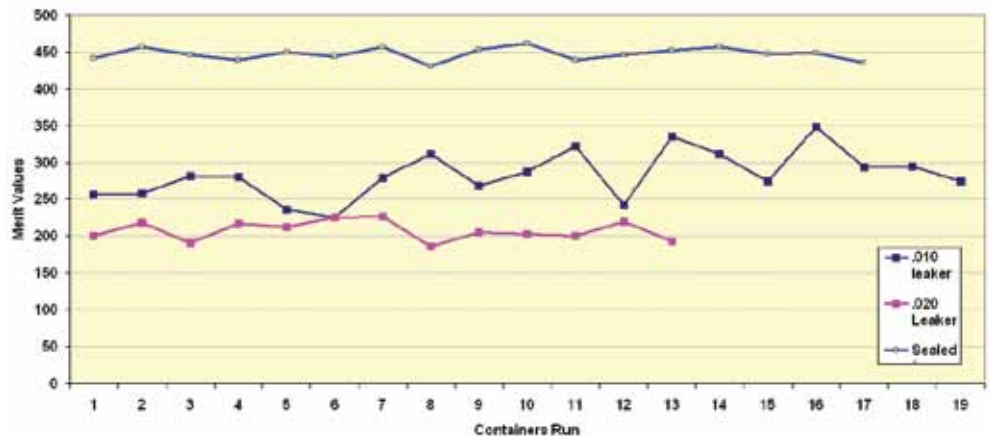


## RESULTS

The graph shows the merit values for the test. The properly sealed containers, when compressed, averaged a merit value consistently around 450. When calibrated leaks were introduced into the cap, the resultant merit value of the container was no higher than 350 for a .010" (.254mm) leak and 240 for a .020" (.508mm) leak.

## SUMMARY

The T4000-C Compression Sensor is capable of detecting leaks as small as .010" - .020" (.254mm - .508mm) at full production line speeds.



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