

# CONTAINER SEALING EVALUATION AFTER REPAIR BY THE WATER LEAK TEST



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## INTRODUCTION-PURPOSE

The container's tightness guarantees the sterility of the instruments. Several methods are used to check for leaks (visual inspection, vacuum bell, ultrasonic test, air test ...) but some are unreliable and impossible to perform in a sterilization unit because a specific equipment is required for its realization. A leak test, able to be easily done routinely has been proposed: the **water test (WT)**.

The **OBJECTIVE OF THE STUDY** is to evaluate the sealing of containers by WT after repair and to compare with the air test (AT) performed by the maintenance company at the annual on-site inspection.

## MATERIALS & METHODS

After repair and evaluation of tightness with AT by the maintenance company, a 2<sup>nd</sup> container leak test was performed: WT.



WATER TEST OPERATING METHOD

It was conducted by an operator and consist in putting a defined volume of water in the container's tank, to put the cover in one way and then put the container on the side for 20 seconds, this for each container's side.

This manipulation is conducted a 2<sup>nd</sup> time by reversing the direction of the lid.  
The WT has taken 10 minutes by container.

## RESULTS

### CONTAINER SEALING EVALUATION AFTER REPAIR BY THE WATER LEAK TEST

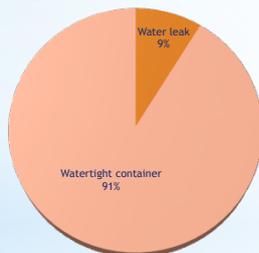


Fig.1: Water test results after repair and air test by the maintenance compagny

→ Fifty-seven Landanger® containers of various sizes were repaired (change of joint, handles, closure system ...) and their sealing assessed with AT by the maintenance company on-site during one week.

→ With WT, 91% of the containers (n=52) were found in compliance with AT (Fig.1).

→ Among the 5 containers leaking during WT, 2 of these containers were discarded, the other 3 returned for repair. Among these 3 containers, 2 were found compliant using the WT when they come back from repair. For the third, repairs are still ongoing.

## DISCUSSIONS

These results show that the WT is similar to AT used by maintenance companies assess for sealing containers. This method may therefore be used to check the tightness of a container. However, there are a number of limitations associated with the WT:

- The water volume to be used to cover the slice,
- Not suitable for containers that have bottom filter tank
- Does not evaluate the joints of the filter holder
- Importance of matching and orientation tank and the lid of the tank

## CONCLUSION

The WT is a quick and easy way to evaluate routinely the tightness of a container. This test is now being part of our practices when a doubt about the sealing of a container is noted before sending it in for repair. This test is also realized when the containers are coming back from repair by maintenance compagny to verify the quality of the work done.