



**WESTPAK, INC.**  
*EXCELLENCE IN TESTING*

# Dye Penetration

**VS.**

# Gross Leak Detection (Bubble)

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# Porous Packaging

- Tyvek® - spunbonded polyolefin
- Paper









# Dye Penetration-Terminology

- Dye penetrant
- Channel
- Wicking



# Dye Penetration-Terminology

- What is dye penetrant?

An aqueous solution of a dye and a surfactant designed to penetrate and indicate a defect location in the time prior to the onset of wicking which could mask its presence



# Dye Penetration-Terminology

- What does dye penetrant consist of?

Distilled water                      99.45%

Wetting agent                        0.5%

Indicator dye                         0.05%









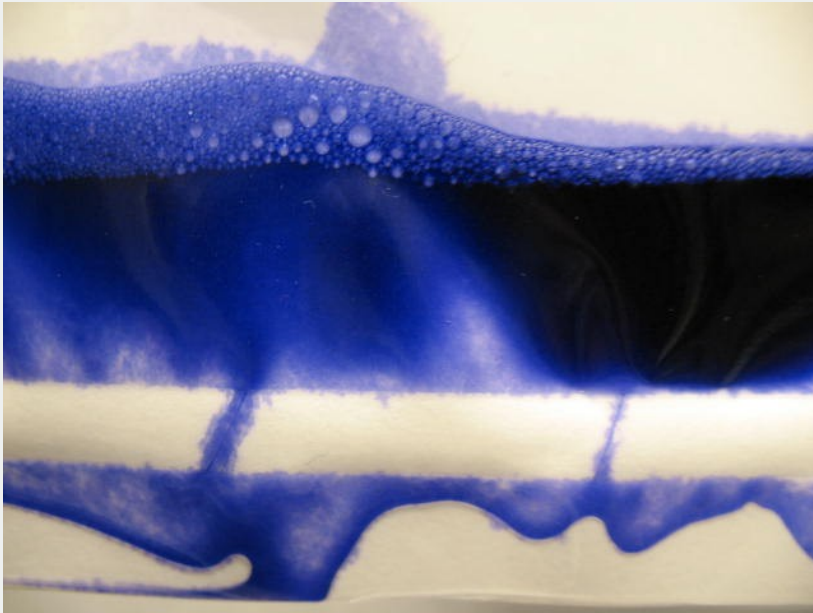
# Dye Penetration - Procedure

- Inject dye penetrant into package (0.25 inch)
- Time duration 5 to 20 seconds
- Rotate package to expose each seal edge to dye penetrant

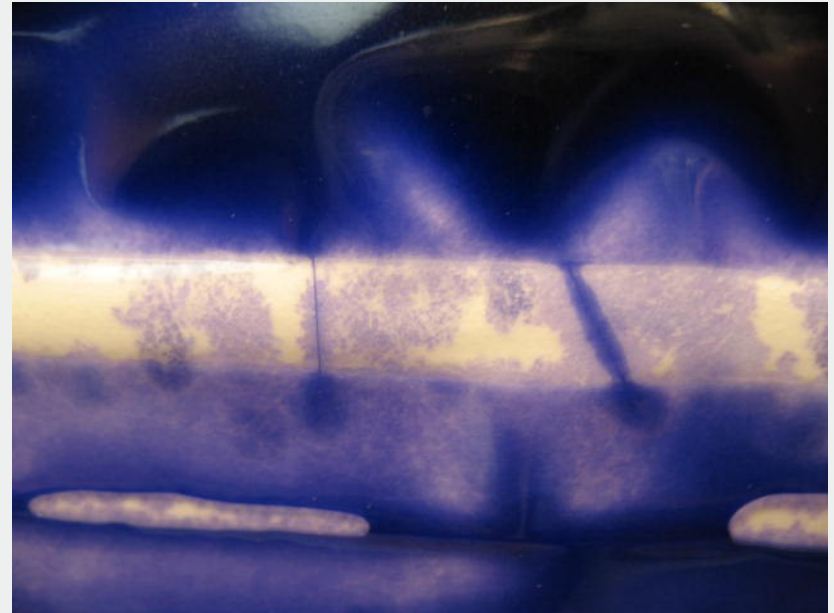


# Dye Penetration - Procedure

- 5 to 20 seconds



- > 20 seconds





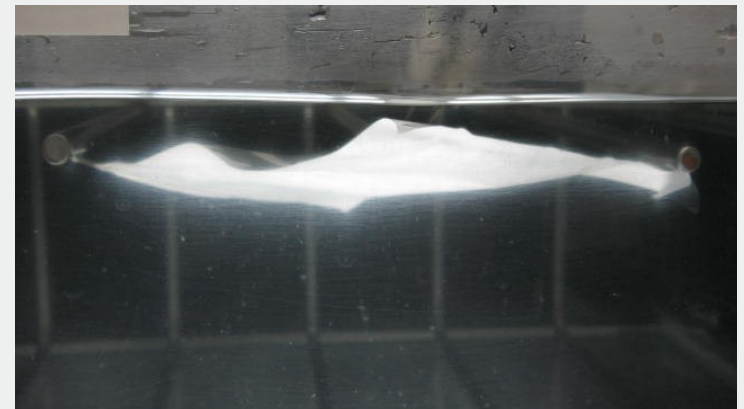
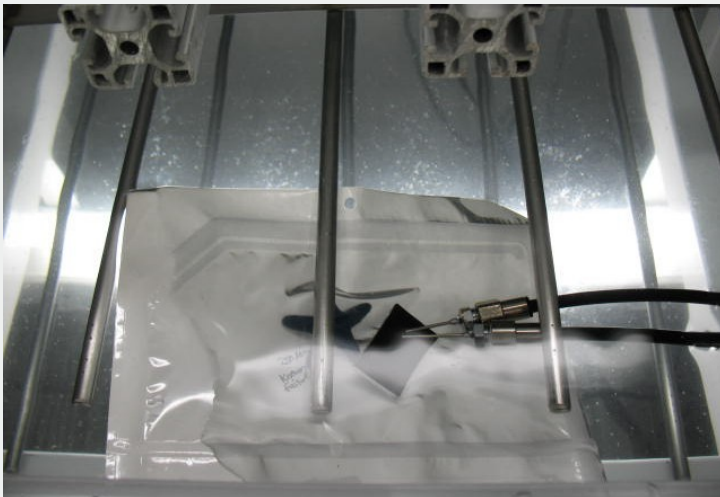
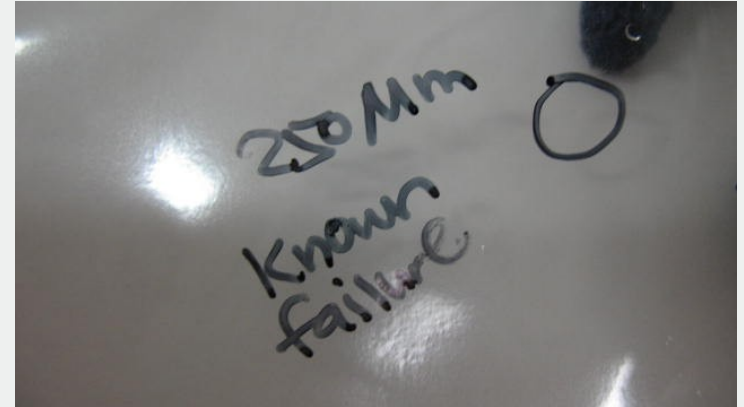
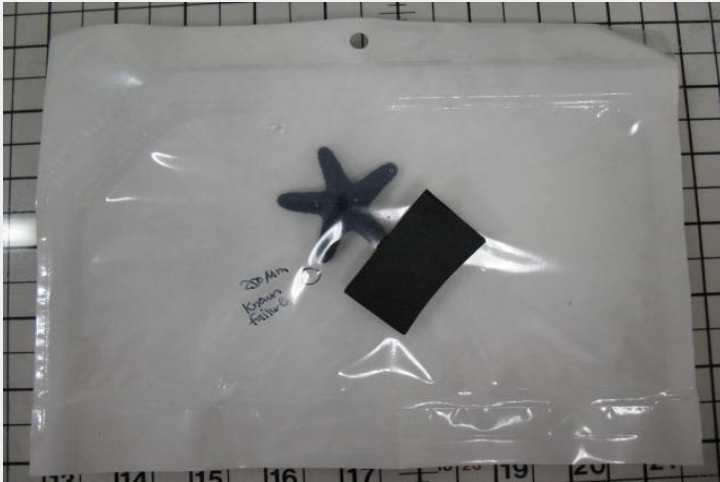
# Gross Leak Detection

- ASTM F2096-11
- Detecting Gross Leaks in Medical Packaging
- Porous and nonporous packaging
- Whole packaging
- Time duration = varies





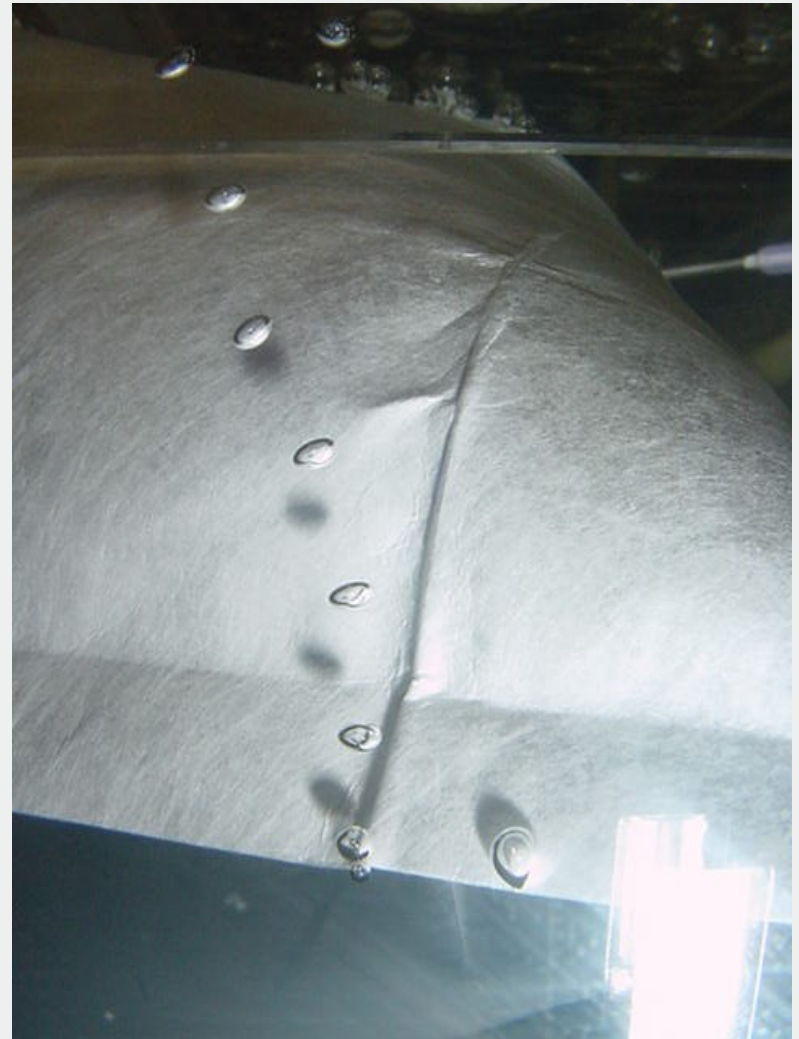
# Gross Leak Detection - Procedure





# Gross Leak Detection & Dye Penetration

- Tyvek® separation
- Abnormal breathing from seal
- Follow up with dye penetration test







# Gross Leak Detection & Dye Penetration

