

Innovative Projects on Condom Packaging Presentations

Dr William Potter
Stapleford Scientific Services Ltd

Background

- Most condoms are packed in square aluminium foil laminate packages
- Circular and rectangular packages are occasionally used
- Other package configurations
 - All plastic packs
 - Moulded plastic circular packs with peelable lids
 - Orienting packs – present the condom in correct configuration for donning
 - Assisted donning packs

Current Packaging Issues

- Recycling
 - Aluminium laminate packs are not readily recyclable
- Disposal
 - Aluminium and some plastic packs do not degrade in landfill or when discarded
- Lubricant leakage
 - Still an issue when condoms are transport by air and stored in high altitude regions

Package Integrity Test

- Current ISO 4074:2015 test
 - Condom packages submerged in water and exposed to a vacuum
 - Specified pressure (20 ± 5 kPa) absolute
 - Time (60 ± 5) seconds
 - Packages observed for bubbles and water penetration after opening
- Test is not always effective

Alternative Package Integrity Test

Dry vacuum test added to ISO 4074:2015

- Packs are constrained in holders to prevent distortion and maximise pressure differential
- Coloured tissue used to detect leaks
- Specified pressure (20 ± 5 kPa) absolute
- Time extended to 20 minutes repeated twice
- Evidence that packages still leak in high altitude regions

New Initiative to Investigate Package Failure

- Condoms tested for conformance using dry vacuum test
- Control samples stored in laboratory
- Test samples stored under vacuum of 57 kPa absolute (equivalent to storage at 15,000 feet)
- Weekly monitoring for leakage
- After 4 weeks, test and control samples will be tested for leakage using the dry vacuum test
- Package peel strength will be monitored in parallel according to ASTM D882 method (Fin Seal Configuration)

Questions?

Thank you for your attention