



## Technical Service Best Practices

### *“Preventing Brittleness in Capsule Filling”*

#### Objective

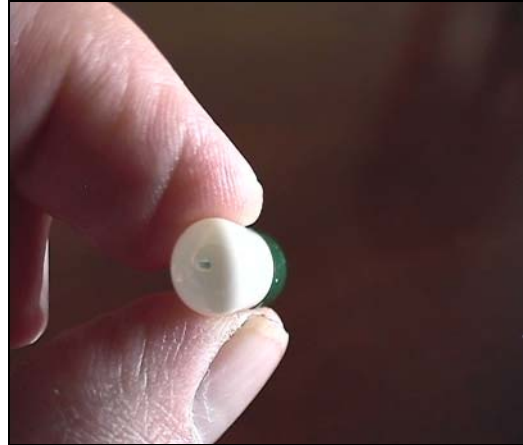
To provide guidelines for those using two-piece capsules, which when adhered to, will help prevent issues of brittleness, capsule cracking and pin-hole defects.

#### Guidelines

- ❖ Proper Capsule Storage and Handling
  - To prevent change in shell moisture, capsules should always be stored within recommended temperature and humidity conditions:  
**59 – 77°F (15 - 25°C)**  
**35 – 65% Rh**
  - Capsules should never be stored next to a heat source. Care should be exercised when storing capsules at high levels where heat is often trapped near ceiling areas.
  - After the carton has been opened, capsules should not be exposed to environmental conditions longer than necessary. After an operator fills the capsule hopper, the bag liner should be closed off immediately until next use.
  - The capsules in machine hoppers should be run through, without leaving them exposed during long breaks between operations.
- ❖ Damage During Capsule Separation
  - **Vacuum Settings** – Generally, and by design, CapsCanada® capsules separate very easily at low levels of vacuum. During separation, if vacuum settings are higher than necessary, capsules may be sucked apart with excessive force, crashing the body dome against separation pins, or into the tooling, causing pin-hole defects and cracked domes. To properly set vacuum, lower the level of vacuum to the point of non-separation, and then gradually raise the flow until full separation occurs.

(Preventing Brittleness continued)

- **Opaque or colored capsules are more prone to brittleness and pin-hole defects than non-opaque capsules; extra care should be taken not to use more vacuum than is needed for separation.**



(Pin-hole defect)

❖ Proper Capsule Closing

- Use a go no-go gauge to determine proper closed length. Studies have shown that over-closing may contribute to increased stress to the cap shoulder, as the cut edge of the body presses outward against the inner wall of the cap shoulder.

- **Capsule is properly closed within the first graduation of the gauge. If the capsule fits into the second graduation, it is over-closed.**



(Closed Length Gauge)

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