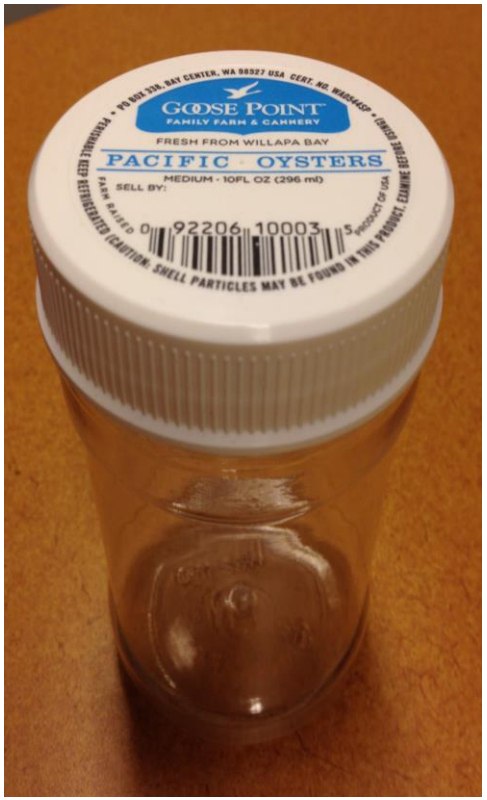
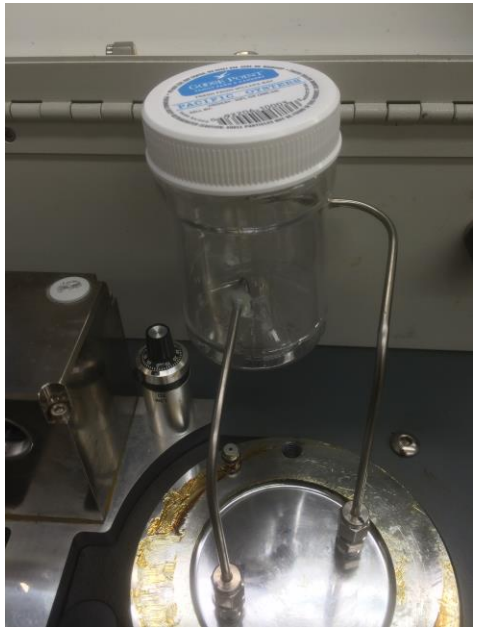
Induction-Sealed Foil-Laminate Lid Container with a Screw Cap



O_2 Permeation through the Screw Cap



- Experimental Conditions
  - Illinois Instruments OTR 8001
  - O_2 partial pressure (0.209 atm), 100% dry N_2, 23°C
  - Container dimension (d x h) = 2.5 in. x 4 in.
  - An induction-sealed lid under the cap was removed

Cap torque (lb_f in)	OTR	
	cc/pkg·day (at 0.209 atm)	cc/m^2·day (at STP)*
10	2.6	468
17	0.15	27

* OTR estimated based on the package's total surface area (~0.0266 m^2)

Double-seamed Aluminum Lid Container with a Snap-On Cap

O_2 Permeation through the Snap-On Cap

- Experimental Conditions
  - Illinois Instruments OTR 8001
  - O_2 partial pressure (0.209 atm), 100% dry N_2, 23°C
  - Container dimension (d x h) = 3.0 in. x 4.5 in.
  - An aluminum lid under the cap was removed

OTR	
cc/pkg·day (at 0.209 atm)	cc/m^2·day (at STP)*
594	77,902

* OTR estimated based on the package's total surface area (~0.0365 m^2)

Alternative – Microporous Lid Film

Fig 1. Top (A membrane glued on a film)

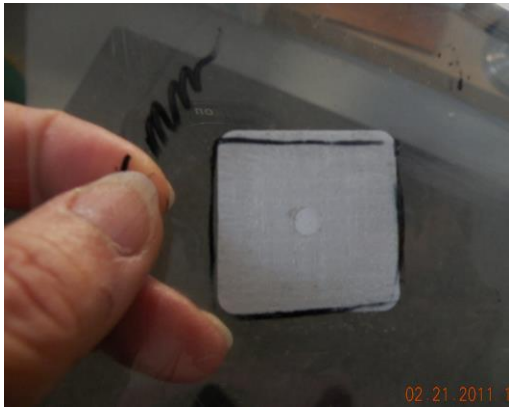
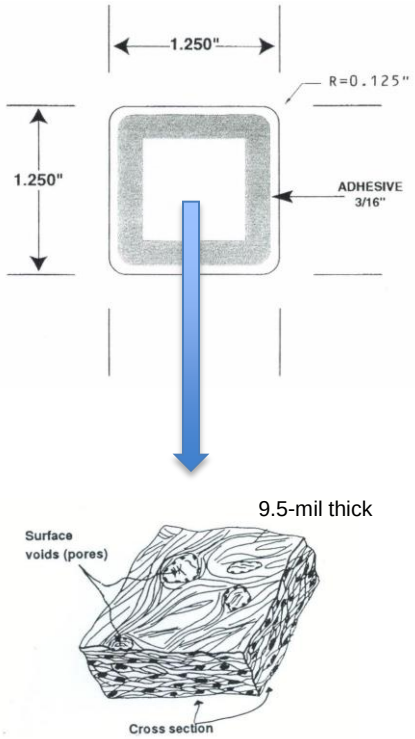


Fig 2. Bottom (A film with a 4-mm hole)



Advantages

- Water impermeable
- Heat-sealable
- Highly breathable

  (OTR > 200K cc/day·atm)