Table I. *Permeabilities of Films to Carbon Dioxide and Water*

Film material	Trade name	Manufacturer	Approximate thickness, microns	Permeability CO_2 $mm^4sec^{-1}dyne^{-1}$	Permeability H_2O	Figure of merit*
Fluorinated ethylene propylene	Teflon	E. I. duPont	13	830	1600	0.82
Polyethylene			25	760	6800	0.18
Rubber dental dam			200	11,000	130,000	0.14
Paraffine and rubber?	Parafilm	American Can Co.	130	4000	69,000	0.093
Oriented styrene			76	700	88,000	0.013
Polycarbonate	Lexan	General Electric Co.	130	1300	210,000	0.0096
Polyvinylidene chloride polyvinyl chloride copolymer?	Saran-wrap	Dow Chemical Co.	13	4.1	910	0.0071
Cellulose acetate			190	1900	610,000	0.0050
Regenerated cellulose	Cellophane		25	9500	3,300,000	0.0046
Polyethylene glycol terephthalate (polyester)	Mylar	E. I. duPont	13	12	8600	0.0022
Hole about 0.01 cm in diameter in aluminum foil sheet						1.3**

* Figure of merit for films is $\dfrac{CO_2 \text{ permeability} \times 1.6}{H_2O \text{ permeability}}$

** Figure of merit for hole in aluminum foil is $\dfrac{\text{observed } CO_2 \text{ diffusion coefficient} \times 1.6}{\text{observed } H_2O \text{ diffusion coefficient}}$