

## ◆●■ 뚜껑(마개)

### 뚜껑(마개)용 폴리에틸렌

- 병뚜껑 (마개)용 탁월한 관능성/물성
- 최적화된 공정 제어를 통한 고객 요구에 맞는 제품 설계 (촉매, 중합, 공단량체 등)
- 식품 접촉 물질 인증 (EU, 미국, 중국 등)

#### 제품 포트폴리오



#### 물

- 생수 (탄산수 제외)
- 우수한 관능성, 우수한 물성 밸런스
- 제품명 : CL9500, CL9800

Grade	MI <sup>1)</sup> [g/10min]	Density <sup>2)</sup> [g/cm <sup>3</sup> ]	YS <sup>3)</sup> [MPa]	FM <sup>4)</sup> [MPa]	IZOD <sup>5)</sup> [kgf·cm/cm]	ESCR <sup>6)</sup> [Fsohr]
CL9500	4.2	0.955	22.5	1,000	13	14
CL9800	10.0	0.958	24.5	1,150	5	4

#### 탄산수

- 이산화탄소를 함유한 음료/물 (감미료/향료 포함)
- 우수한 ESCR, 관능성, 가공성
- 제품명 : CL9000, CL9010, CL9200, CL9210

Grade	MI <sup>1)</sup> [g/10min]	Density <sup>2)</sup> [g/cm <sup>3</sup> ]	YS <sup>3)</sup> [MPa]	FM <sup>4)</sup> [MPa]	IZOD <sup>5)</sup> [kgf·cm/cm]	ESCR <sup>6)</sup> [Fsohr]
CL9010 CL9000	0.8	0.957	24.5	1,130	15	200
CL9210 CL9200	2.0	0.957	23.5	1,050	17	15



#### 무균 음료

- 민감하고 고신선도를 요구하는 음료 마개에 적합 (무균 뚜껑 & 고열 뚜껑)
- 고강성, 높은 충격강도, 관능성, 상대적으로 높은 내열성 및 산소차단성
- 제품명 : CL9902

Grade	MI <sup>1)</sup> [g/10min]	Density <sup>2)</sup> [g/cm <sup>3</sup> ]	YS <sup>3)</sup> [MPa]	FM <sup>4)</sup> [MPa]	IZOD <sup>5)</sup> [kgf·cm/cm]	ESCR <sup>6)</sup> [Fsohr]
CL9902	2.0	0.967	28.5	1,350	9	30



▶ 표시된 특징은 일반적인 값을 나타내며, 사양을 의미하지 않음

▶ 시험법: <sup>1)</sup>ASTM D1238, <sup>2)</sup>ASTM D1505, <sup>3)</sup>ASTM D638, <sup>4)</sup>ASTM D790, <sup>5)</sup>ASTM D256(@23 °C), <sup>6)</sup>ASTM D1693(10 v/v%, 50 °C)

▶ 손쉬운 도포 및 개봉을 위한 슬립제 : CL9010 & CL9210

## ●●■ Caps & Closures

### Polyethylene for Caps & Closures

- Excellent organoleptic, physical properties for Caps & Closures
- Design of the products to meet customers' needs via optimized process control (Catalyst, Polymerization, Comonomers, etc)
- Food contact material certification (EU, US, China, etc)

#### Product portfolio (by applications)



#### Water

- Still water, Mineral water (except carbonated water)
- Excellent Organoleptic properties, Good balance of physical properties
- Products name : CL9500, CL9800

Grade	MI <sup>1)</sup> [g/10min]	Density <sup>2)</sup> [g/cm <sup>3</sup> ]	YS <sup>3)</sup> [MPa]	FM <sup>4)</sup> [MPa]	IZOD <sup>5)</sup> [kgf·cm/cm]	ESCR <sup>6)</sup> [F <sub>50hr</sub> ]
CL9500	4.2	0.955	22.5	1,000	13	14
CL9800	10.0	0.958	24.5	1,150	5	4

#### CSD (Carbonated Soft Drink)

- Beverage and water containing carbon dioxide (with sweetener and flavor)
- Good ESCR, Organoleptic properties, High processability
- Products name : CL9000, CL9010, CL9200, CL9210

Grade	MI <sup>1)</sup> [g/10min]	Density <sup>2)</sup> [g/cm <sup>3</sup> ]	YS <sup>3)</sup> [MPa]	FM <sup>4)</sup> [MPa]	IZOD <sup>5)</sup> [kgf·cm/cm]	ESCR <sup>6)</sup> [F <sub>50hr</sub> ]
CL9010 CL9000	0.8	0.957	24.5	1,130	15	200
CL9210 CL9200	2.0	0.957	23.5	1,050	17	15



#### Aseptic

- Fit for sensitive and freshness high-required beverage filling (for Aseptic fill & Hot-fill)
- High Stiffness, Good Impact Strength, Organoleptic properties, Relatively higher heat-resistance and oxygen barrier properties
- Products name : CL9902

Grade	MI <sup>1)</sup> [g/10min]	Density <sup>2)</sup> [g/cm <sup>3</sup> ]	YS <sup>3)</sup> [MPa]	FM <sup>4)</sup> [MPa]	IZOD <sup>5)</sup> [kgf·cm/cm]	ESCR <sup>6)</sup> [F <sub>50hr</sub> ]
CL9902	2.0	0.967	28.5	1,350	9	30

- ▶ Properties shown represent typical values; not to be construed as specifications.
- ▶ Test Method: <sup>1)</sup>ASTM D1238, <sup>2)</sup>ASTM D1505, <sup>3)</sup>ASTM D638, <sup>4)</sup>ASTM D790, <sup>5)</sup>ASTM D256(@23 °C), <sup>6)</sup>ASTM D1693(10 v/v%, 50 °C)
- ▶ Slip agent for easy application and opening: CL9010 & CL9210