




PACKAGE COMPONENT SPECIFICATION

TITLE  24 oz. Gel Ice (EnviroCoolant)		NUMBER EVC240714408Reg	PAGE 1 of 4
		DOCUMENT OWNER C. Derifield	EFFECTIVE DATE 04/10/2008
CORPORATE QA/Snr Mngt Approval 	04/10/08	DOCUMENT OWNER APPROVAL 	DATE 04/09/2008


1. Material Requirements

1.1. Film 3.5 mil multi-layered, coextruded polyolefin

1.1.1. Melt Index at 230°C:	2.2 MFI (g/10min)
1.1.2. Youngs Modulus:	
1.1.2.1.1.1. Longitudinal Direction:	75100 psi
1.1.2.1.1.2. Transverse Direction:	73100 psi
1.1.3. Elongation:	
1.1.3.1.1.1. At Yield	18%
1.1.3.1.1.2. At Break	440%
1.1.4. Tensile Strength:	
1.1.4.1.1.1. At Yield	3280 psi
1.1.4.1.1.2. At Break	5380 psi
1.1.5. Heat Sealing Range (Degrees C, Thermal):	160-220
1.1.6. Tensile Strength @ 23°C (MPa):	32 - 36
1.1.7. Modulus of Elasticity @ 23°C (MPa):	410 - 540
1.1.8. Instrumented Impact, Energy to Break (Rupture) (J):	0.42
1.1.9. Tear Propagation (g-f):	240
1.1.10. Coefficient of Friction:	0.20 – 0.30
1.1.11. Dart Impact:	220 g

1.2 Gel Synthetic Polymer (Cross-Linked Sodium Polyacrylate Polymer)

1.2.1	Sodium Polyacrylate Polymer: (CAS# 9033-79-8) < 1%
1.2.2	Potable Water: > 99%
1.2.3	No ingredients are designated as a hazardous material by the US Federal DOT (Land Transport); IMDG (Sea Transport); IATA.CAO (Air Transport)
1.2.4	Odor: Odorless

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2. Dimensional Requirements

2.1 Gel Pack

- 2.1.1 Dimension (seal to seal when filled): 8.0 in. x 5.5 in. x 1-1/2 in.
(229 mm x 152 mm x 38 mm)
- 2.1.2 Tolerance: $\pm 1/4$ in. (± 6 mm)
- 2.1.3 Weight: 24 oz.
- 2.1.4 Tolerance: ± 5 %

4. Packaging Requirements

- 4.1 Gel Ice packaging in corrugated case
 - 4.1.1 24 gel packs per case


9. Expiration Dating

Not Applicable

10. Mechanical Requirements

- 10.1 Latent Heat of Fusion: 393 KJ/Kg $\pm 5\%$
- 10.2 Specific Gravity: ~ 1.05 g/mL
- 10.3 Viscosity: $\sim 10,000$ cP
- 10.4 Specific Heat Capacity: 0.44 cal/g°C $\pm 5\%$
- 10.5 Melting/Freezing Point: -0.23°C

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DOCUMENT HISTORY

Number	Description of Change	Initiator	Issue Date
03042008	New	C.Derifield	04/10/2008