




# PACKAGE COMPONENT SPECIFICATION

<b>TITLE</b>  32 oz. Gel Ice (EnviroCoolant)		<b>NUMBER</b> EVC32071408LRG	<b>PAGE</b> 1 of 4
		<b>DOCUMENT OWNER</b> C. Derifield	<b>EFFECTIVE DATE</b> 04/10/2008
<b>CORPORATE QA/Snr Mngt Approval</b> 	04/10/08	<b>DOCUMENT OWNER APPROVAL</b> 	<b>DATE</b> 07/14/2008


## 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): 10.5 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. ( $\pm 6$  mm)

2.1.3 Weight: 32 oz.

2.1.4 Tolerance:  $\pm 5\%$

4. Packaging Requirements

4.1 Gel Ice packaging in corrugated case

4.1.1 18 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:  $\sim 1.05$  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:  $-0.23^\circ\text{C}$

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## DOCUMENT HISTORY

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