CLARIFOIL - TYPICAL PHYSICAL PROPERTIES

Clarifoil cellulose diacetate film is available in a number of standard formulations or grades:

- T17 is the standard, food contact formulation used in most films from 14µ up to 95µ thickness.
- T24 is also suitable for food contact use and is used for thicker films from 115µ - 500µ.
- J24 is a special grade for matt pressure sensitive tapes.
- FR4 is a clear, 36µ flame retardant cellulose acetate film.
- LOKI is a chemically modified 50µ acetate film, designed to give high destructibility for tamper evident applications. See LOKI data sheet CFL 501 for details.

Clarifoil's distinctive characteristics are:

- Outstanding clarity and gloss in clear film form, with low haze.
- Very low, near-zero birefringence. Non-oriented cast film.
- High water vapour transmission rate.
- Good tensile strength and elongation, combined with a relatively low tear strength. Ideal for tamper evident labels and seals, and easy tear tapes.
- Good die cutting performance and good printability and compatibility with adhesives. Outstanding foil blocking performance.
- Matt acetate offers a rich, deep surface matt. Excellent appearance and good "write-on" characteristics.
  - Distinctive semi-matt finishes are also available in acetate Satiné products.
- The solvent casting process offers a very flexible method of introducing additives into Clarifoil films.

Representative data is given over for 50µ matt and clear films (T17) and 250µ T24 film. Additional data appears on specific data sheets or is available on request.

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Property	50µ T17 Gloss	50µ T17 Matt	250µ T24 Gloss
General			
Specific gravity	1.32	1.32	1.31
Equilibrium moisture content, % (23C and 50% RH)	1.8	1.8	1.8
Surface energy (dyn cm^{-1})	38 - 42	38 - 42	38 - 42
Optical			
Transparency (%) ASTM D1746	91	20.4	89.1
Gloss (%) ASTM D523, BS 2782 520A: 20º	138	1.2	137
60º	146	9.1	143
85º	120	23	116
Haze(%) ASTM D1003, BS 2782 521A	1.5	70	2.4
Refractive Index	1.485	1.485	1.490
Mechanical			
Tensile strength (Nmm^{-2}) ASTM D882	80 - 110	80 - 110	80 - 110
Elongation at break (%) ASTM D882	25 - 45	25 - 45	20 - 40
E-Modulus (Nmm^{-2}) ASTM D882	1900-2500	1900-2500	1700-2000
Tear initiation (N) ASTM D1938	0.095	0.095	1.31
Tear propagation (N) ASTM D1938	0.070	0.070	0.94
Thermal			
Softening temperature (C)	137	137	127
Glass transition temperature (C)	120	120	92
Moisture Vapour Transmission Rate			
$gm^{-2}day^{-1}$ 25C, 100% RH	580	n/a	n/a
$gm^{-2}day^{-1}$ 38C, 100% RH	954	n/a	468
Electrical			
Surface resistivity (Ωsq^{-1})	5.1×10^{13}		
Dielectric breakdown ($kVmm^{-1}$)	15		

Please note:

All properties are measured after conditioning to 23C, 50% RH unless otherwise mentioned.

The values quoted are typical lab results and must not be regarded as a supply specification. For some properties sample preparation will critically affect measured values, e.g. the elongation at break figures above are only achieved if the test specimens are cut to give a very good edge (a guillotine is not suitable).

Units quoted are the ones conventionally used. SI or US Imperial figures are available on request. However, the company cannot accept responsibility for errors or omissions.

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