Polymer Chemistry Innovations, Inc.

## Pressure Sensitive Adhesive - PSA

Pressure sensitive adhesives (PSA) are often used in a film-like coating on a variety of substrates in order to bond that substrate to another. The PSA can be prepared and applied in a solvent and the solvent evaporated off or the PSA can be prepared in a hot melt and applied hot or formed into films. Good pressure sensitive adhesives feature adhesive and cohesive properties and maintain permanent tackiness. There are many different variations and needs and no recipe will suit all purposes. Here is a good starting point for developing a hot melt PSA recipe.

**PLASTICIZERS** – one or more of the plasticizers. The percent varies by plasticizers and the amount varies from 8% - 30 % by weight. Here is a partial list of plasticizers used in PSA blends with Aquazol.

| | | |
|---|---|---|
| Propylene carbonate 10 – 25% | Glucose 5-15% | Cornstarch 5% |
| PEG 20K 8-20% | Glycerin 15-18% | |

**Aquazol** to add adhesive and cohesive, strength, and film forming properties, 50 – 75 % by weight

Aquazol 5 and a small amount of Aquazol 200 most commonly used.

In these examples the hot melt mixtures were prepared at 160 °C.

| Example 1 | Example 2 | Example 3 |
|---|---|---|
| 75% Aquazol 5 | 70% Aquazol 5 | 50% Aquazol 5 |
| 10% propylene carbonate | 25% propylene carbonate | 16% Aquazol 200 |
| 15% glucose | 5% cornstarch | 25% propylene carbonate |
| | | 9% cornstarch |

**Benefits**

**Aquazol** is a clear film-former that gives a wrinkle free adhesive with papers.

**Aquazol** is FDA approved to use as indirect food contact (adhesive)

**Aquazol** based adhesives adhere to wet and damp surfaces and can be applied at high speed on cold or damp substrates.

**Aquazol** is readily removed with water for ease of clean up.