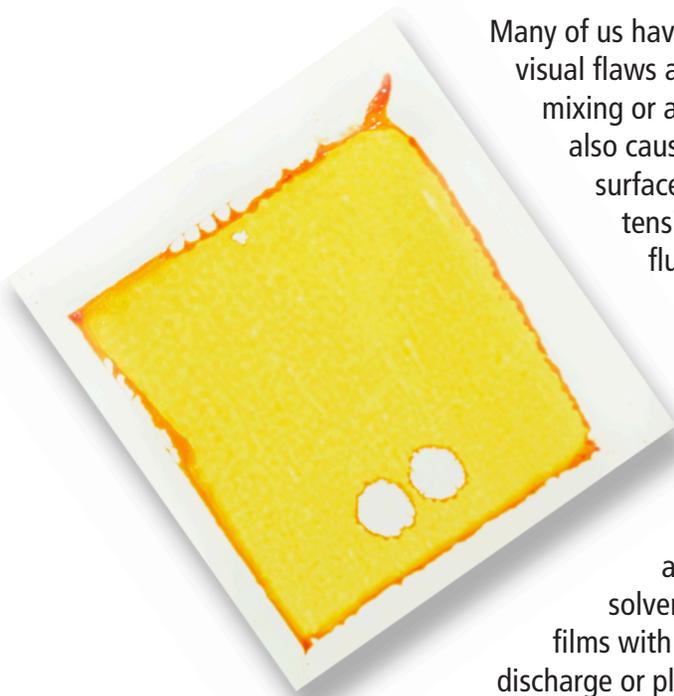




## Adhesive Film Break Up



Many of us have applied a waterborne coating to a surface only to see visual flaws appear. These flaws may be due to air entrapment while mixing or applying the adhesive. Surface contamination by oils may also cause wet film breakup. More frequently, the cause is that the surface free energy of the solid surface is lower than the surface tension of the adhesive. Polyethylene, polypropylene, polyfluorocarbons, and silicones have low surface free energy. These materials must be treated by corona discharge or plasma before being coated with adhesive.

Adhesive film break up can be solved either by modification of the material you wish to coat, or modification of the adhesive.

Dirty surfaces may be cleaned simply with soap and water. Oils may be removed with an appropriate solvent followed by an isopropyl alcohol wash. Plastic films with low surface free energy may be treated by corona discharge or plasma to increase their surface free energy.

The adhesive can be modified in a variety of ways. Surfactants may reduce the surface tension of the wet adhesive sufficiently to permit it to coat evenly. Similarly, a thickener may be added to the adhesive to increase its viscosity to the point where the resistance to flow overcomes the surface tension forces. Frequently, surfactants and thickeners are required to control wet film break up when coating silicone coated release paper.

If the formula is modified, it must be tested to assure that its adhesive and other physical properties have not been altered. It is recommended that samples of the material you wish to coat be sent to the adhesive supplier for analysis.