



## *Sprague-Mag SM-1, SM-2 & SM-4 Magnetic Developer*

*Sprague-Mag* is a magnetic “developer”, which permits the visual examination of the magnetically recorded data on such items as tapes, disks, the mag-stripe on an ATM card, hotel card key, Driver’s licenses, currency, or credit cards.

Uses include manufacturing quality inspections, field service trouble shooting, anti-fraud/security checks, and as an engineering prototyping tool. This developer is so versatile that if you are involved with any product associated in any fashion with magnetic recording, then the potential applications for this developer is limited solely by your imagination. Typical uses include such things as checking recorder head alignment, track placement, dropout analysis, skew and noise; to cue for splicing; to synchronize video or audio tapes (when they have been recorded at high or saturation levels); and as an anti-counterfitting tool.

As with many virtually indispensable tools, the concept of the developer is simplistically itself. There are iron particles suspended in a fluid with a high and rapid evaporation rate. Thus, the developer is placed onto the magnetic surface, the liquid evaporates and the magnetic particles orient themselves in accordance with the magnetic pattern on the surface of the material until the magnetic pattern is fully delineated..

It is available with two different sizes of iron particles. The regular particle size ranges from 1 to 3 microns. The extra fine (XF) developer has spherical iron particles with a diameter of no larger than 0.05 microns. The choice of particle size is determined by your application and the density of the recorded magnetic fields/information.

*Environmentally safe.* There used to be a number of similar products available to *Sprague-Mag*, but all of them used ozone depleting CFC’s to insure quick liquid evaporation. With the new federal regulations restricting the use of such chemicals, these other magnetic developers have disappeared from the marketplace. *Sprague-Mag* does not use CFCs, rather it uses an environmentally friendly and acceptable (under current regulations) Dichloro Fluoroethane (HCFC 141B) as the evaporative liquid that the iron particles are suspended in, and for an aerosol propellant in the spray version, *Sprague-Mag* uses carbon dioxide.

**NOTE:** HCFC 141B has no effect on magnetic cards, but is an active solvent for some materials such as used in cassette bodies. Effect on tape and tape coating is minimal. Screen/test the material prior to use.

**Directions for use:** Shake first to insure proper and even suspension of the magnetic particles. Apply to an inclined surface with a cellulosic paper or tissue as backing to absorb excess *Sprague-Mag*. This immediate removal of excess material yields a distinct and clean visual trace. When done, remove the *Sprague-Mag* trace with cleaning cloth or scotch removable tape #811 or “Post It” adhesive backing (3M or equivalent). *Sprague-Mag* XF cannot easily be completely removed, and its use must be considered a destructive test. (XF is only available in the SM-4)

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