



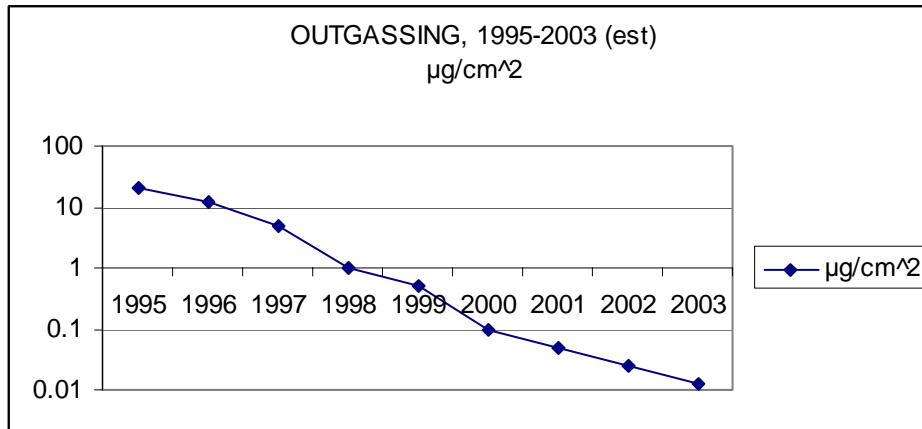
POLYONICS helps control contamination in the assembly of hard disk drives.

The development and use of MR (magneto-restrictive) and GMR head technologies has greatly enabled hard disk drive manufacturers to increase memory capacity in disk drive assemblies, and to dramatically increase read/write rates. However, it has also greatly increased the sensitivity of the head/disk interface to particulate and chemical contamination. Coupled with higher spindle speeds which generate increased heat, label and tape materials inside the drive mechanism may outgas more, depositing residue on critical surfaces in the drive assemblies. Design and contamination control engineers are requesting labels and tapes to incorporate low-outgassing technology and higher bond strengths, while maintaining strippability after burn-in, for rework. As the Disk Drive industry continues to develop high performance data storage technology, tape and label manufacturers will be challenged to formulate adhesives for disk drive assembly that are more electronically clean and *ultra low –outgassing* compared to those being used today. This challenge will require the ongoing development of superior, *clean bonding adhesives* as well as *non-contaminating release liner* technology.

These changes in head technology required a new breed of electronically clean adhesives which control outgassing and limit corrosion due to trace contaminants. Polyonics focused on three major technology improvements in its label materials for identification of disk drives:

- reducing VOCs by weight;
- eliminating acrylic acid which causes head corrosion and media fogging;
- developing release liners that are organo-tin and/or silicone free.

Today's adhesive components are almost 200 times cleaner than those produced just five years ago.



This new generation of electronically clean technology is not only cleaner but *strippable*, allowing for clean removal of seals, labels and filters from stainless steel, cast aluminum, stamped aluminum and e-coated aluminum with no adhesive residue after exposure to high temperatures, e.g., 100°C for 24 hours. Strippable PSA products eliminate extra labor costs associated with removing adhesive residues during the rework process. They also reduce the probability of contamination and leaks associated with the application of replacement seals.

Each disk drive manufacturer has different specifications for VOC's, acrylic acid, silicones, particulate, and ionic contamination. Polyonics is well-equipped to handle each unique requirement. For more information, or to discuss specific testing or labeling needs, please contact our **Technical Service Department** at info@polyonics.com.