

Semplastics Overview

- Parent company- American Industrial Plastics (AIP)
- Supplier of Ultra-Precision plastics for over 20 years
- Over 65 years of IC industry experience in-house
- Focused expertise on plastic materials
 - No metallic or ceramic machining in plastics area
- Extensive technical knowledge of all plastic materials
- Best-in-class skill in fine and precise machining of all plastics
- Known and trusted supplier of CMP carrier rings for over 5 years
 - Commercial supply at 4 US customers
 - Evaluations currently at 10 US customers

Uniqueness of Ultra-Precision Plastic Parts

- Inert plastics are critical for certain semiconductor processes such as CMP
- Plastics are much more difficult to machine to ultra-precision tolerances than metals or ceramics
 - Semplastics incorporates its proprietary ULTRAFLAT™ manufacturing technology to achieve best-in-class flatness and parallelism
- Semplastics has manufacturing expertise in over 300 different types of plastics, each requiring unique processing and machining techniques
 - Knowledge of the plastic material is essential in machining ultra-precision parts
 - Developed unique C-10™ plastic optimized for CMP applications

Manufacturing Issues with Current CMP Ring Technology: Tolerance

- Poor consistency of manufactured dimensional tolerances
 - Change in tolerance over time (creep)
 - Notch wear on inner ring diameter
- Dimensional inconsistencies lead to decreased yields and lower plant efficiency
 - Increased wafer breakage (slippage)
 - Degraded process consistency (WIWNU)
 - Increased cost
 - Non-optimized tool utilization
 - Increased carrier rebuilds
 - Test wafer usage

Manufacturing Issues with Current CMP Ring Technology: Wear

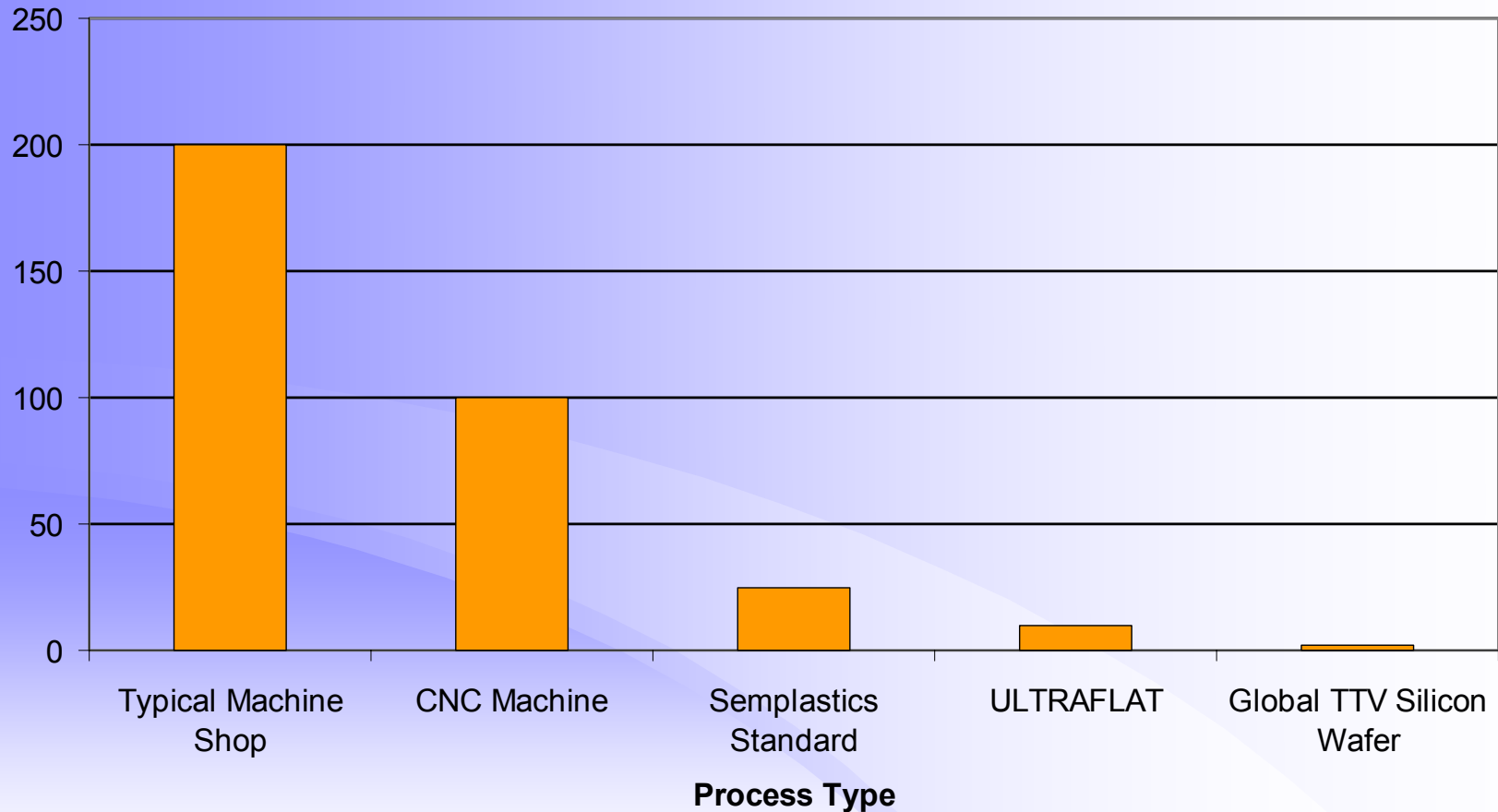
- Poor choice of materials of construction
 - Sub-optimal wear characteristics per application
 - Variability in wear rate for dielectric, tungsten and copper
 - Variability in raw material source
 - Results in large variation in expected ring lifetime
- Material choice key for low cost of ownership (CoO)
 - Frequent and expensive ring changes
 - Cost of ring
 - Tool downtime to for ring installation
 - High CoO
 - Poor defectivity due to plastic extrusion variations
 - Voids
 - Non-homogeneous materials (density)
 - Variable wear and shedding

Semplastics' World-Class Plastics Capability

- ULTRAFLAT™ -Semplastics' proprietary technology
 - Holds flatness and parallelism of a specified dimension in a mounted and fixed position
 - 10 microns maximum for 200mm applications
 - 15 microns maximum for 300mm applications
 - All CMP rings are manufactured with ULTRAFLAT™ technology
- Superior plastics knowledge allows for optimizing both the machining and wear properties
 - Different plastics need variations in machining to achieve ultra-precision metrics
 - Semplastics has the experience needed to machine numerous types of plastics to these specifications
 - Wear properties are controlled by the choice of materials
 - Different CMP processes have variable wear rates on ring plastic
 - Semplastics can optimize the material choice to reduce wear and CoO
- Superior quality control for ring manufacture
 - Identify and measure each ring
 - Ring I.D., thickness, parallelism, flatness all QC controlled and traceable

Example of ULTRAFLAT™ Ultra-Precision Plastic Fabrication

Flatness and Parallelism Tolerances(Microns)



Summary

- Semplastics brings a unique combination of machining expertise and materials knowledge to the high-tech marketplace
- Large depth of IC industry experience and perspective (65+ years)
- Strong history of supply to demanding IC customers
 - Demonstrated capacity and upside swing reserve capacity
- Strong IP position
 - ULTRAFLAT™, C-10™ technologies
 - All-plastic AMAT ring
- Demonstrated improvements in CoO and wafer breakage
 - Demonstrated 2.5X lifetime increase with potential for 5X
 - Ability to significantly reduce customer's CoO
 - Proven 66% CoO reduction at customer site
 - Significant reduction in ring related wafer breakage
 - Potential to improve WIWNU and copper defectivity