8103 INK Hard CURING GUIDELINE UPDATE (25 – 40 mil dots)

The following is an update to the 8103 ink ambient temperature curing recommendations. Xandex guidelines had previously indicated a maximum room temperature cure time of 2.25 hours for dots greater than 25 mil (625 μm) in diameter. This guideline was developed in a laboratory setting, by testing at ambient temperature of 70 degrees F, single un-etched silicon wafers (no passivation) set on table top. Hard cure was tested by applying an adhesive tape on 4 rows of dots.

This test has shown that longer cure time is needed in all cases to hard cure the ink dots of 25 – 40 mil in ambient conditions. Cure time of 4 - 6 hours is required for larger dot sizes. When developing your curing process, it is important to keep in mind that 8103 ink cures through solvent evaporation, and the actual time required for ambient curing is affected by several factors:

Dot Size: Larger dots require longer cure times. A 40 mil dot requires a much longer ambient cure time than a 25 mil dot.

Wafer Boats: Stacking wafers in a carrier boat would increase cure time.

The table below summarizes the new cure time guidelines for 25-40 mil 8103 ink dots.

CURE TYPE	TEMPERATURE	CURE TIME	RESULT
Hard Cure	Air dry, ambient conditions, single wafer	4-6 hours for 25-40 mil	Ink dots would withstand sawing / scribing conditions

Cure time could be improved by increasing the temperature and/or air flow during the curing process. The most dramatic reduction in cure time was achieved by placing the wafers in a low temperature oven. At 40^{o} C, the cure time was reduced to less than one hour. Increased air flow (137 CFM) across the wafer surface also had a strong effect on the curing rate, reduced to less than 2.5 hours.

If you have questions about this update, or need guidance in establishing or modifying your 8103 curing process, please contact Xandex Customer Service for assistance.

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