

Unit Dose Label Study



Memorandum

Business Media Division

Subject:

From: Stan Serwon
To: Jim Jackson

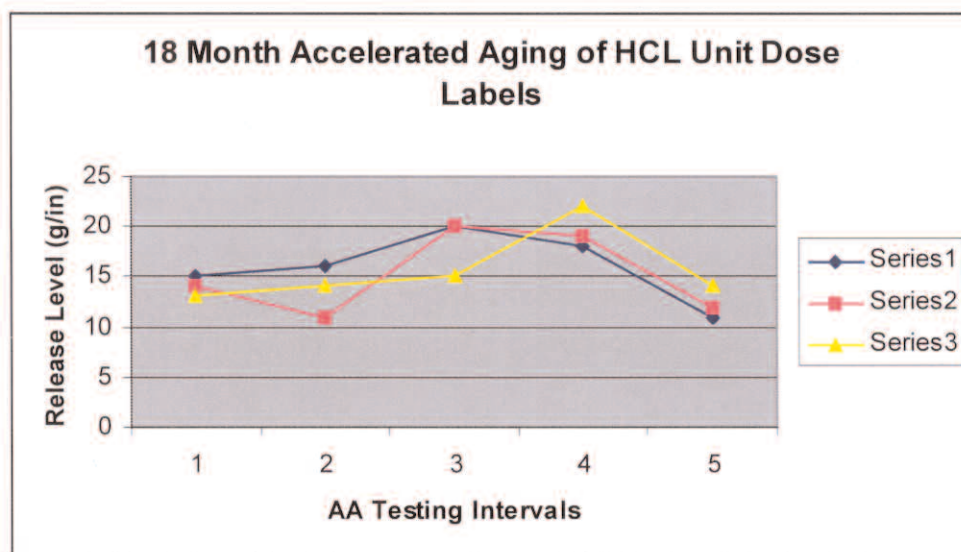
Date: July 8, 2004
Copies: Andre Saint

Jim,

Per our discussions, below is the report on results of an accelerated aging study conducted recently on the HCL Unit Dose label product.

Summary

Samples were aged at 200F/1psi pressure for 150hrs to accelerate any adhesive/facestock/liner interactions that could occur under extended warranty conditions. Data is shown below and indicates that no significant change in release occurs between the adhesive and release liner over a simulated 18 month period, assuming that product is stored per Avery's normal recommendations:



Conclusion

Based on our data and assuming proper storage conditions, Avery Dennison will extend the normal warranty period on the Unit Dose Label product from 12 to 18 months, effective immediately and until further notice.

Unit Dose Label Study

Experimental

5 testing periods were employed (n=3) and standard T-peel release testing was employed per our standard procedure. Release values varied randomly between 12-22 grams/in, including immediate (off press) values. There was no correlation between time and release values indicating good product stability over a simulated 18 month storage period.

Additionally, no chemical interaction between adhesive and facestock was observed over the life of the test. Significant lateral coldflow of adhesive was observed but it had no effect on release values.

Samples adhered to HCL pill cavities appeared stable over time as well.

The only detrimental effect observed was laminating adhesive migration (used to bond the facestock to the foil). After 3 days accelerated aging, migration or bleed-thru of the laminating adhesive was observed at the facestock, which could affect toner adhesion or transfer residue to the printer. The potential for this type of migration to occur is high when the sheeted product is stored at elevated temperatures and/or stacked >3 cartons high. Such temperature conditions can exist when stored in the upper levels of a warehouse, covered outdoor storage or against uninsulated walls in the summertime, etc. - extreme storage. Examination of actual file samples ~24 months old indicate that if the product is stored at 72F/45% ERH (Avery recommendations) the condition is not likely to occur.

Therefore, assuming that the Unit Dose labels are stored per Avery's recommendations, the label sheets should be useable with no noticeable change in performance to 18 months.

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