

# Chemsultants

Experts in Adhesive & Laboratory Testing

August 14, 1998

Tim O'Neil  
O'Neil Software  
8 Mason  
Irvine, CA 92718

Subject: Project 98-113 Accelerated Age Testing

Dear Mr. O'Neil

Your test samples have completed the 90-day testing condition, which is roughly equivalent to warehouse aging in non-direct sunlight for a period of twenty years. The samples are being returned by UPS to your attention and should arrive soon. At your request additional samples are continuing the aging process for another 30 days. You should receive those samples in about a month.

Samples you applied to corrugated board were oven aged at 70°C (158 °F) for 90 days but inspected at 30 day intervals. Both set of samples faired the process well.

At 30 days:

- ⌚ Samples numbered 000155 to 000163 on the brown board displayed a very slight darkening in color (reddish tint) and tunneling of label 000156, 000159 & 000162.
- ⌚ Samples numbered 000173 to 000182 on the white board displayed a slight darkening in color (reddish tint) and slight tunneling of label 000181

At 60 days:

- ⌚ Samples numbered 000155 to 000163 on the brown board displayed a slightly greater reddish tint. The tunneling of labels 000156, 000159 & 000162 increased and fine bubbles appeared under the surface of all the labels.
- ⌚ Samples numbered 000173 to 000182 on the white board displayed a darker reddish tint. The tunneling of label 000181 increased.

At 90 days:

- ⌚ Both sets remained essentially unchanged. As well as can be recollected samples, the color changes that occurred previously stopped. The tunneling previously noted did not get any worse.

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None of the samples displayed any signs of peeling, flagging, curling, penetration, migration or oozing. The labels are clearly legible to the eye. There should be no problem reading the bar code with a reader, ever in locations where tunneling occurred.

Thank you for allowing us to perform this test on your behalf. Should you have any questions regarding the procedures or results, please call. As stated earlier in this report, the final samples will follow in about a month.

Best regards,  
Chemsultants, Inc.

Donald L. Eppink  
Manager of laboratory Services

9349 Hamilton Drive  
Mentor, Ohio 44060-4559  
(216) 352-0218 Fax (216) 352-8572  
[www.chemsultants.com](http://www.chemsultants.com)

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