

Roediger Agencies cc

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ANALYTICAL LABORATORY

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7 April 2011

Pieter Pretorius
Extraordinaire Systems
PO Box 941
7357 LANGEBAAN

Dear Mr. Pretorius

A snorkel (LLDPE) was sent to the analytical laboratory of Roediger Agencies cc for accelerated weathering. Results were obtained via the following test method.

QUV

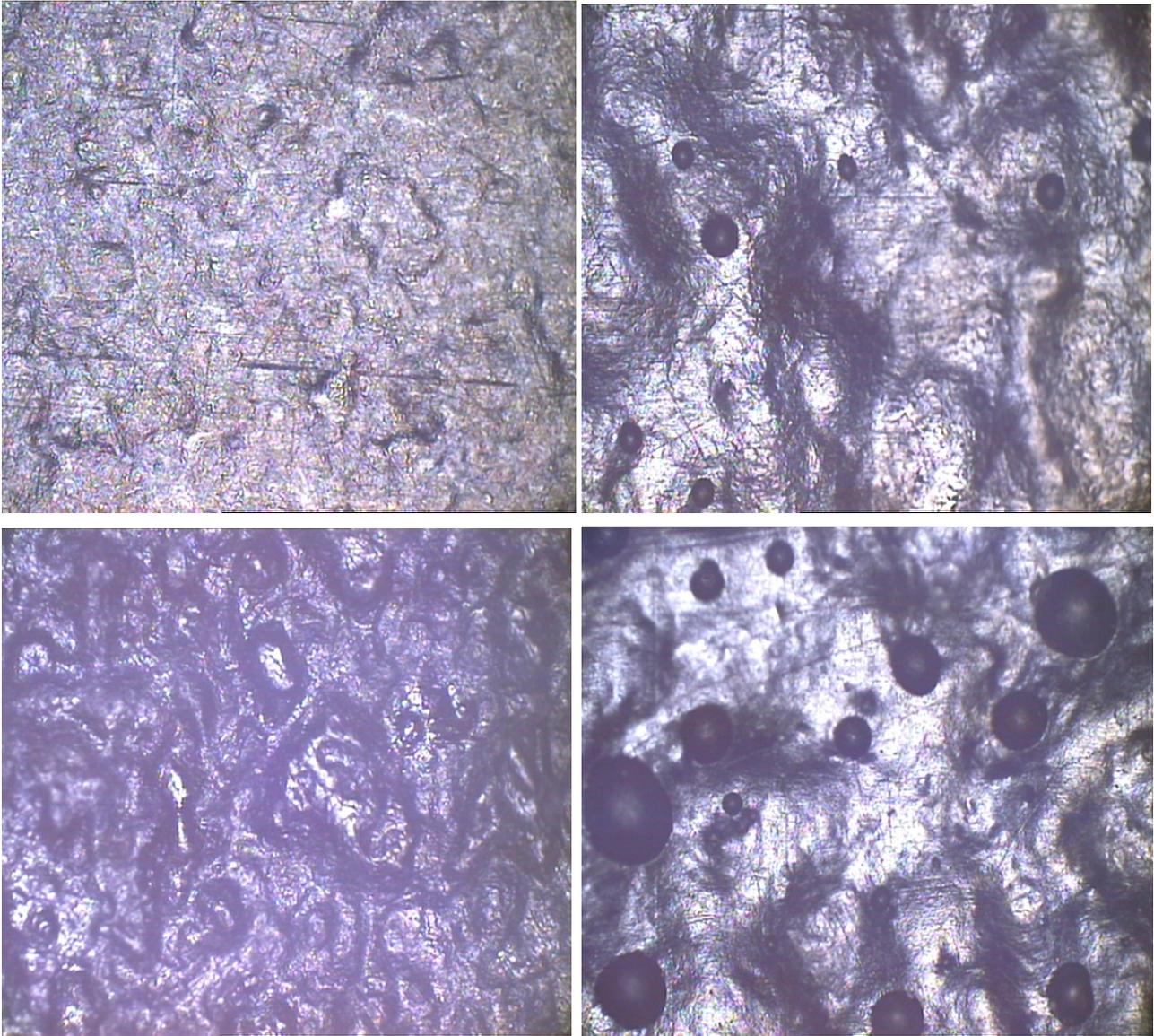
A QUV fluorescent UV/condensation tester can be used to accelerate weathering. Different types of ultraviolet light bulbs can be used in the tester to emphasize different wavelengths. UVB radiation is responsible for most polymer damage.

The bulbs used were of the type UVB-313, which gives the highest irradiation at a wavelength of 313 nm. Results obtained with these lamps correlate well with results of outdoor exposure for gloss retention on coatings and for the material integrity of plastics. With the exception of the automotive industry, the UVB-313 is the most widely used light source for the ASTM G-53 devices. However, the short wavelength output below the solar cut-off can cause anomalous results.

Two types of weathering cycles are used; 1) Wet cycle is an 8 h exposure to a UV cycle at 45 °C, followed by a 4 h condensation cycle at 50 °C, only the actual UV exposures hours are taken into consideration to determine the outdoor exposure equivalent. 2) Dry cycle a continuous exposure to a UV cycle at 45 °C. The reported number of hours of exposure is equivalent to the total time of UV exposure recorded.

In our experience with tests carried out to evaluate the weathering of plasticised poly(vinyl chloride), an exposure time of 3000 hours correlates to a ten-year period. It must be borne in mind that the degradation that takes place is not linear over the time of exposure, it is exponential.

The snorkel has been exposed to a wet cycle for 600 hours which equates to ± 1 year outdoor.



Summary

After 600 hours in the wet cycle, no loss in gloss and no cracking are visible when looking at the photographs depicted above.

Yours faithfully,

A handwritten signature in black ink, appearing to read "A. Roediger". The signature is written in a cursive, flowing style.

Dr. AHA Roediger.

Please take note that samples will be retained for a one year period and discarded thereafter.