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Quick-Mark™ Immersion Tests – Skydrol and Aviation Fuel.

*Document reference: 97/174/NP
(version 2)
11 September 1997*

97/174/NP (version 2)

1. Materials submitted for Testing.

“Quick-Mark” laminated labels stuck to 65 x 55mm aluminium backing panels as follows:

1. 9 x unprotected labels
2. 9 x 3950 edge sealer protected labels (edges sealed only)
3. 9 x Courtaulds CV116 protected labels (labels completely coated)

2. Test Procedure

Three of each type of labels were totally immersed in Skydrol hydraulic fluid at a temperature of 25°C for a period of 336 hours.

Three of each type of label were 3/4 immersed in aviation fuel at a temperature of 25°C for a period of 336 hours.

Inspections were carried out at 30 minutes, 3 hours, 7 hours and 24 hours, then at 24 hour intervals (except weekends) from the start of the test.

Three of each type of label were retained as controls.

3. Test Results and Observations

Immersion in Skydrol Hydraulic fluid			
Exposure Period (hours)	Plain Labels	Labels Edge Sealed With 3950	Labels Sealed with Courtaulds CV116
0.5	No change	Edge sealer softening	No change
3	Slight loss of adhesion	Sealer removed by wiping action, slight loss of adhesion of label	ditto
7	ditto	Slight loss of adhesion of label	ditto
24	Base laminate swelling and breaking down at edges. Label still legible	Base laminate swelling and breaking down at edges	ditto
48	ditto	ditto	ditto

97/174/NP (version 2)

Immersion in Skydrol Hydraulic Fluid			
Exposure Period (hours)	Plain Labels	Labels Edge Sealed with 3950	Labels Sealed with Courtaulds CV116
120	Base laminate swelling and breaking down at edges.	Base laminate swelling and breaking down at edges	Base laminate showing signs of limited local attack
144	ditto	ditto	ditto
168	ditto	ditto	ditto
192	ditto	ditto	ditto
216	ditto	ditto	ditto
288	ditto	ditto	ditto
312	ditto	ditto	ditto
336	Adhesive softened, clear laminate lifting and Base laminate swelling and breaking down, extending inwards approximately 7mm from edge of label. Label still legible	Adhesive softened, clear laminate lifting and Base laminate swelling and breaking down, extending inwards approximately 7mm from edge of label. Label still legible	Clear laminate lifting from Base, label showed limited signs of local attack, through defect in coating. Label still legible.

97/174/NP (version 2)

Immersion in Aviation Fuel			
Exposure Period (hours)	Plain Labels	Labels Edge Sealed with 3950	Labels Sealed with Courtaulds CV116
0.5	No change	Edge sealer softened	No change
3	ditto	ditto	ditto
7	Slight loss of adhesion	ditto	ditto
24	ditto	ditto	ditto
48	Slight delamination of label	ditto	ditto
120	ditto	ditto	ditto
144	ditto	ditto	ditto
168	ditto	ditto	ditto
192	ditto	ditto	ditto
216	ditto	ditto	ditto
288	ditto	ditto	ditto
312	ditto	ditto	ditto
336	Base and clear laminate, very slight lifting. No blistering. Label still legible.	Edge sealer softened. Label not lifting and legible. 7 hours after removal from test sealer has regained hardness.	Sample is unaffected by aviation fuel.

NOTE: For immersion in Aviation Fuel and Skydrol, there was no deterioration that affected performance or legibility. No cracking or blistering was evident.

End of report