



Resiflow™ LH-240 Technical Brief #1

Preliminary Evaluation of Resiflow Products in a commercial Gel Coat

Objectives:

- Evaluation of a range of Resiflow additives for flow, leveling & air release characteristics in a commercial Iso Clear Gel Coat.
- Comparative analyses for thixotropic properties, gel time, clarity/compatibility, flow, leveling and air release

Activities:

- The following Resiflow products were selected for evaluation
LV, L-67, LH-240, L-37, L-65, L-16, LF, Q-92, T-1
- The additives were incorporated at 1% with a commercial Iso gel coat
- Samples were shaken vigorously and placed in the 25°C (77°F) waterbath for 24 hours. This allowed for temperature equilibration and the release of any incorporated air, which could alter viscosity measurements
- Brookfield Viscosity measurements were taken with a #4 spindle at 6 rpm and 60 rpm, 25°C.
Thixotropic Index = (cps @ 6 rpm) / (cps @ 60 rpm)
- Gel Time test was slightly modified from the provided test procedure; only 50g gel coat was used with 0.75g DDM-9 (MEK peroxide)
- Each sample was sprayed 20 - 30 mils (500 - 750 µm) onto pre-waxed¹ glass plates and allowed to cure overnight
- Conclusions were made on the final peeled-off films

Data and Results:

- See Data Table on next page
- Relative number ratings for clarity, air release and leveling for each Resiflow product were assigned by visual examination
- Air Release is quite important, because residual air pockets can result in blistering in some final use situations
- Leveling property is integral for next coat adhesion to the backside of the gel coat (especially in laminates).

Gel Coat Specifications

Viscosity	3400-3600 cps
Thix. Index	5.5-6.5
Gel Time	6-9 minutes
Film Cure	60 min, Max

¹ TR High Temp Mold Release from Ashland Distributor would be a better selection for release agent than the S.C. Johnson's Carnuba Wax

DATA

Iso Clear Gel Coat	6 rpm	60 rpm	Thixo. Index	Cup Gel Time	Clarity	Air Release	Leveling
No Additives	15 500	2 340	6.62	11.5			
With an Air Release	16 300	2 440	6.68	9.7			
With a Flow Control	18 000	2 660	6.76	9.5			
With Resiflow LV	14 200	2 240	6.34	10:10	8	2	8
Resiflow L-67	15 600	2 380	6.55	11:30	6	8	7
Resiflow LH-240	13 700	2 040	6.71	9:58	10	9	9
Resiflow L-37	15 400	2 450	6.28	11:30	5	9	8
Resiflow L-65	16 600	2 530	6.56	16:30 ²	8	9	9
Resiflow L-16	15 500	2 410	6.43	10:33	8	9	9
Resiflow LF	16 400	2 330	7.04	10:29	3	8	5
Resiflow Q-92	15 900	2 380	6.68	10:26	8	9	8
Resiflow T-1	18 100	2 600	6.96	9:30	3	6	9

Conclusions

- LH-240 appears to be the best Resiflow candidate for the Gel Coatings Market.
- LH-240 does not drastically affect the Thixotropic index, which is important for spraying application purposes.
- LH-240 exhibits superb clarity, as well as exceptional air release and leveling properties

² Additives which greatly retard the cup gel time are not desirable, because they increase delay in production time from gel coat setup to next layer application