

SERVICE BULLETIN 17


SUBJECT: DERAKANE VINYL ESTER RESIN

APPLICATION: All vinyl ester resin shipped from our factory between June 3, 1985 and October 8, 1986.

DESCRIPTION: On June 3, 1985, the Dow Chemical Company replaced Derakane 411-45 vinyl ester resin with Derakane 411-R claiming there were no differences in physical properties or curing characteristics. They reported the major difference between the two resins was that an anti-foaming agent was added to the 411-45 resin creating a new resin, designated Derakane 411-R. The purpose of the anti-foaming additive was to produce a clearer (more bubble-free) laminate when using automated machinery, which many of Dow's customers use.

Dow has recently found that 411-R has a faster gel time drift than 411-45. Gel time drift, which is common in most resins to various degrees, is a slowing of the cure or gel time when measured over time. In other words; the gel time of your promoted resin will gradually lengthen over time. Based on the fact that our customers' promoted resin may be used at a much slower rate than commercial users, we wish to take the extra precaution of having all builders check their existing promoted resin gel time with the following simple test before proceeding with the construction of their Glasairs:

TEST PROCEDURES & SOLUTIONS: Take a 100 gram sample of promoted resin and catalyze it with 1 cc of MEKP. Be sure that you run this test at the temperature for which your resin was promoted according to the resin promotion chart in the Glasair construction manuals. If you have promoted your resin with 3 cc of DMA, your test sample should be at a temperature of 67-70° F when catalyzed or 80-85° F if no DMA was added. In order to best simulate the control test, the resin should be in an 8 oz. Dixie squat container or a 6-1/2 oz. tuna can-sized container and be approximately 1" deep. Regardless of the container used, it is more important that both the resin and catalyst be measured accurately. Note the exact time when the MEKP catalyst was added and keep an eye on the resin and note the time when the resin gels. Gelation is defined as the state of the resin when it becomes rubbery and is no longer runny. The standard gel time for freshly promoted resin should be approximately 35 minutes. If your gel time is 60 minutes or less, your promoted resin is acceptable. If you are experiencing a gel time in excess of 60 minutes, use the following re-promotion procedure on your resin which is already promoted.

					
MODEL	ASSEMBLY NAME	REVISION	DATE	VOLUME	PAGE
GLASAIR	SERVICE BULLETIN 17		10/16/86		1 of 2

MODEL	ASSEMBLY NAME
GLASAIR	SERVICE BULLETIN 17

Original Promotion

Re-Promotion

Temperature: 65-85° F  
Resin: One gallon  
CONAP: 5 cc  
DMA: 3 cc

One gallon  
2.5 cc  
1.5 cc

Temperature: 80-100° F  
Resin: One gallon  
CONAP: 5 cc  
DMA: 3 cc

One gallon  
2.5 cc  
0 cc

(Note: The above quantities are for one gallon of resin. When re-promoting your resin, measure the quantity of resin to be re-promoted in your container in order to calculate what percentage of the above promoters to use.)

When you have finished re-promoting the resin, repeat the gel test. If the gel time is still beyond the 60 minute limit, add once more the same quantities of promoters used in the first re-promotion. If after this second re-promotion the resin fails to gel within 60 minutes, either your catalyst or resin batch is no longer useable. We recommend replacing both with fresh supplies.

Stoddard-Hamilton Aircraft recommends that all builders perform the gel test once a month to insure resin and chemical quality. If you have not worked on your project for a period of time, the gel test should be performed before continuing work and each following month thereafter.

As Dow Chemical is once again furnishing 411-45, as of October 8, 1986, Stoddard-Hamilton began shipping Derakane 411-45 resin in its customer resin shipments. Although the gel time drift is less for 411-45 resin, we advise all builders to regularly test their 411-45 resin as well to verify proper resin promotion.

WARNING: These test procedures and solutions must be complied with.



MODEL GLASAIR	ASSEMBLY NAME SERVICE BULLETIN 17	REVISION	DATE 10/16/86	VOLUME	PAGE 2 of 2
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