

Inter-office Memo

TENNECO CHEMICALS, INC.

To P. F. Albanese At Flemington Date April 23, 1969
From A. V. Wagner At Burlington Copy to Attach. Distr.
Subject Antistat Control

Antistatic agents are added to our resin for one purpose, to reduce or eliminate static on the resin so that it can be transported without a static problem. It is important to add enough antistat to prevent this problem, but not enough to affect resin properties. The following conclusions with respective recommendations are necessary to provide a controllable system.

CONCLUSIONS

1. The antistat additive system should be made more controllable.
2. The antistat addition to the resin wet cake should be made more consistent by determining the percent Ninol in the solution, calibrating the rotometer, and spraying the solution into the wet cake rather than adding by a single stream.
3. To prevent antistat from being added when the drying system is down, a "fool proof" system must be incorporated. It is proposed that the centrifuge and antistat valve be interlocked for this purpose.
4. The drying rate of each type resin must be known so that the desired amount of antistat can be added per pound of resin. Either the centrifuge amperage should be correlated to the drying rate or a slurry flowmeter be installed for this purpose.

RECOMMENDATIONS

1. Calibrate rotometer to insure correct flow of antistat solution.
2. Either correlate centrifuge amperage to drying rate or determine the slurry rate (Engineering has been requested by Production to install a slurry flowmeter) so that the antistat rate can be adjusted to give the desired addition per pound of resin.
3. Interlock centrifuge and antistat valve to prevent possible antistat build-up in the drier when the system is down (Engineering has been requested to carry out this work).

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4. Develop a test procedure to determine the percent Ninol in the antistat solution.
5. Put a nozzle on the antistat feed line to disperse the antistat solution.

DISCUSSION

In order to establish a controllable system the following modifications in our equipment and techniques are necessary.

1. Ninol Solution - The percent Ninol in the Ninol solution should be determined so that the desired amount can be added to the resin. The present volumetric make-up procedure is adequate, if the percent Ninol is known. The rate of solution can be adjusted to compensate for this.
2. Rotometer Calibration - The rotometer should be calibrated to determine the deviation from the scale, if any. This could be carried out during a shutdown or a run that does not use Ninol.
3. Ninol Addition - A nozzle should be added to the antistat feed line to disperse the antistat solution. The present method of addition (single stream) does not result in a uniform mix with the resin.
4. Drier Stoppages - If for any reason the drying system is stopped (eg. broken centrifuge shear pins, high contamination resulting in a stoppage), the addition of antistat must also be stopped, as it is possible that this may be forgotten in the haste to correct the problem. It is proposed that the centrifuge and antistat valve be interlocked to prevent this from happening.
5. Ninol to Resin Rate - The resin rate through the drying system must be determined so that the desired amount of antistat per pound of resin can be added. Two means of achieving this are (1) correlate centrifuge amperage to the drying rate and (2) install a slurry flowmeter as has been requested by Production.

A recent complaint from Decca Records concerning the poor bulk flow of Tenneco 388 and the transfer problems we experience with this resin resulted in the returning to Ninol as an antistatic agent. No problems were experienced in transferring the T-388 resin processed with Ninol or screening thru 50 mesh, a common problem with ammonia produced resin.

The T-388 processed with a controlled Ninol rate had good flow (193 seconds). Only one of seven previous lots had faster flow times. In fact, only one of nine Capitol lots had faster flow times. The second lot had a flow time of 145 seconds which is better yet. This demonstrates that the use of Ninol with the proper control is more advantageous than ammonia from the standpoint of processing ease and that it can be controlled.

Production has already instituted a program to improve the control of this system. The Burlington Analytical Group has set up a temporary test to determine percent Ninol in the solution. A finalized test procedure is presently being worked on.

This program, therefore, is being carried out. There has been no word, however, when the interlock between the centrifuge and antistat add system would be installed because of the heavy Engineering workload.

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