

INTER-OFFICE MEMO **TENNECO CHEMICALS, INC.**

TO Quality Control Distribution AT
FROM W. C. Champion AT
SUBJECT COPOLYMER ROUTINE TESTING SCHEDULES

DATE October 16, 1975
COPY TO J. R. Gregor
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File

The attached Quality Control Procedures are for inclusion in your manual. They are a revision of the routine testing schedule for all copolymer production at Flemington and a revised routine testing schedule for Burlington copolymer.

The first procedure replaces procedure 6-204a in your current manual, while the second (204b) is a new issue.

Copies of these procedures will be issued to all Quality Control technicians.


W. C. Champion

WCC/gs

Attachment

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COLORITE 009840

TENNECO CHEMICALS, INC.
ORGANICS & POLYMERS DIVISION
QUALITY CONTROL

DATE: October 9, 1975

METHOD NO.: 6-204a

QUALITY CONTROL ROUTINE TESTING:
COPOLYMER RESIN, FLEMINGTON PLANT

This procedure lists the tests to be routinely run on Flemington copolymer production. It covers sampling frequencies and tests required for dryer samples, lot composites (both bulk and bag), and bulk shipments. The testing outline pertains to the following products: 314, 315, 385, 389, 391.

No changes in the frequencies or test requirements are to be made without the authorization of the Quality Control Supervisor.

A. Dryer Sample Testing

A two-pound sample is to be submitted to the laboratory from each dryer line every hour. These samples should be tested as follows:

1. Contamination - each hour sample
2. Magnetic particles - each hour sample
3. Oversize on 54 mesh bolting cloth (0.0145 opening) - each hour sample
4. Volatile content - initial, 1-hour, 2-hour and every third subsequent hour (4-hour, 7-hour, etc.)

The presence of any hard particles (those which cannot be broken with a spatula) in the oversize should be noted and called to the attention of production supervision. Whenever possible, these particles should be microscopically examined and identified (burned resin, reactor glass, metal, rust, etc.).

Production supervision is to be notified immediately of any out-of-specification results, and a second sample obtained from the dryer for testing.

B. Lot Composite Testing

When the lot is finished drying, equal proportions of the dryer samples should be thoroughly mixed to produce a uniform composite for testing. The results of these tests will be the basis for grading the lot. The following tests should be run:

1. Relative Viscosity - all products
2. Bulk Density - all products
3. Heat Stability - every fifth lot, all products
4. Oversize - all products
5. Hard Particles - all 315, 385, 389, 391

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6. Percent Acetate - all products
7. Screens - all products
8. Brabender Viscosity - every fifth lot, all products
9. Brookfield Viscosity (CBS Test) - all 315
10. Press-out Test (Flintkote Mold Test) - all 314

All out-of-specification results should be repeated at the discretion of Quality Control supervision. Percent volatiles should be reported as the average of the dryer sample results. Average contamination, maximum contamination and magnetic particle count should be calculated from the dryer sample results.

Lots may be graded, to avoid delay, without results for acetate, heat stability, or Brabender viscosity. All other tests must be completed prior to grading. If Grade 1 lots are subsequently found to be out-of-specification, based upon delayed testing, they should be regraded.

Any lots which are known to have been subjected to unusual production conditions (mischarge, short-stopped, etc.) should be graded "E", regardless of test results, and held for disposition by Marketing.

C. Bagging Lot Samples

All lots bagged are assigned a new lot number, and should be tested and graded. Testing should be as follows:

1. A two-pound sample is submitted from each pallet. This should be tested for contamination, magnetic particles, and oversize as in "A" above.
2. Equal proportions from the pallet samples should be blended to produce a uniform composite. The composite should be tested for volatiles content and for all other lot analysis properties shown in "B" above.

D. Bulk Shipment Samples

Bulk shipment testing by Quality Control is designed primarily to assure that the correct product type has been loaded, that product quality has not deteriorated in storage or transfer, and that specific customer requirements not covered by in-process or lot testing are met. This testing is not designed to "approve" or grade material.

The specific lot or type of material to be loaded is designated by production scheduling. If a lot graded "E" (or a lot outside of a specific customer's specification) is to be loaded, the name of the person giving the approval should be noted on the loading sheet. This will generally be the appropriate Marketing Manager, but, in the case of high volatiles only, may be a member of Production Management.

Sampling of bulk shipments is covered in detail in a Plant Standard Operation Procedure. Testing should be as follows:

1. For Bulk Trucks, two-pound samples will be submitted representing transfer to the truck (usually the bin, first, fifteenth, and twenty-fifth blow). The bin sample should be checked for relative viscosity. All of the samples should be checked for volatiles content, contamination, magnetic particles and oversize.

Hard particles should be checked for and reported for all record shipments.

2. For Bulk Trucks, two-pound samples will be submitted from each hatch after the completion of loading. Each sample should be checked for contamination, magnetic particles and oversize.
3. For rail cars, samples will be submitted representing the bin and the top and bottom of each compartment. Each sample should be tested for volatiles content, contamination, magnetic particles and oversize (hard particles for record resin). The bin sample should be tested for relative viscosity.
4. Special customer tests, as required by a Customer Instruction Sheet, should be performed on a composite of the transfer samples.
5. If any of the test results are out-of-specification (except for those covered by a marketing release of "E" grade material), the shipment will not be released by Quality Control. When such a situation arises, Production and/or Quality Control supervision should be notified immediately. All out-of-specification volatile results should be reported, regardless of prior clearance to load. A decision on the release of the shipment will be made in conjunction with Marketing.

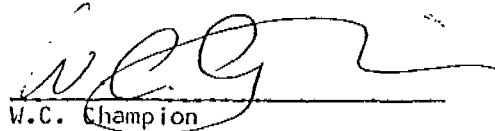
E. Testing of Special Production
(LOP, SPA, NPI)

All special production should be tested in accordance with the procedure for the specific product, or as outlined in the Special Production Request. If specifications differ from standard, they will be listed in the request. All products made under LOP or SPA should be graded. Product made under NPI is not graded.

F. Additional Testing

If product or in-process testing not covered by this schedule is required, Production Supervision or Process Engineering should request such tests in writing, using a Special Test Request form.

Written by: T. Cader/ W. C. Champion

Issued by: 

W.C. Champion
Supervisor, Quality Control

Supersedes Issue Dated: August 29, 1975

TENNECO CHEMICALS, INC.
ORGANICS & POLYMERS DIVISION
QUALITY CONTROL

DATE: October 9, 1975

METHOD NO.: 6-204b

QUALITY CONTROL ROUTINE TESTING

COPOLYMER RESIN, BURLINGTON PLANT

This procedure lists the tests to be routinely run on Burlington copolymer production. It covers sampling frequencies and tests required for dryer samples, lot composites (both bulk and bag) and bulk shipments. The testing outline pertains to the following products: 314, 315, 385, 389 and 391.

No changes in the frequencies or test requirements are to be made without the authorization of the Quality Control Supervisor.

A. Dryer Sample Testing

A two-pound sample is to be submitted to the laboratory from the dryer once per hour. These samples should be tested as follows:

1. Contamination - each hour sample
2. Magnetic particles - each hour sample
3. Volatile content - initial, one-hour and each third subsequent hour (4-hour, 7-hour, etc.)

Note: If any volatiles content value is above the specification maximum, each hourly sample submitted is to be tested until such time as two consecutive in-specification results are obtained. At that point, the third hour testing may be resumed.

Production supervision is to be notified immediately if any out-of-specification results, and a second sample obtained from the dryer for testing.

B. Lot Composite Testing

At ten hours of drying time, and at each subsequent ten hours (or portion thereof), equal proportions of the dryer samples should be thoroughly mixed to produce a uniform composite for testing. The results of these tests will be the basis for grading the lot. The following tests should be run:

1. Relative viscosity - all products
2. Bulk density - all products
3. Screens - all products

If a lot is completed five or more hours after the last ten-hour composite is tested, an additional composite should be prepared and tested as above.

At the final completion of a lot, a composite of the ten-hour composites is to be prepared and the following tests performed:

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1. Heat stability - each fifth lot - all products
2. Brabender viscosity - each fifth lot - all products
3. Percent acetate - all products
4. Brookfield viscosity (CBS test) - all 315
5. Press-out test (Flintkote mold test) - all 314

All out-of-specification results should be repeated at the discretion of Quality Control supervision. Percent volatiles should be reported as the average of the dryer sample results. Average contamination, maximum contamination and magnetic particle count should be calculated from the dryer sample results. Relative viscosity, bulk density and screen results are to be reported as the average of the ten-hour composite tests.

Lots may be graded, to avoid delay, without results for acetate, heat stability or Brabender viscosity. All other tests must be completed prior to grading. If Grade 1 lots are subsequently found to be out-of-specification, based upon delayed testing, they should be regraded.

Any lots which are known to have been subjected to unusual production conditions (mischarge, short-stopped, etc.) should be graded "E", regardless of test results and held for disposition by Marketing.

C. Bagging Lot Samples

Bagging lots are graded on the basis of dryer samples, as above. Bagged material is to be additionally tested in the following manner:

1. A two-pound sample is to be submitted from each pallet. Each fifth pallet is to be checked for visual and magnetic particle contamination. Oversize is also to be checked on these samples.

The presence of any hard particles (those which cannot be broken with a spatula) in the oversize should be noted and called to the attention of production supervision. Whenever possible, these particles should be microscopically examined and identified (burned resin, reactor glass, metal, rust, etc.).

The same procedure is to be followed with regards to out-of-specification results on these samples as those noted in section "A" above.

D. Bulk Transfer Samples

A two-pound sample is to be submitted to the laboratory from the bulk transfer system every two hours during transfer. These samples should be tested as follows:

1. Contamination - each sample
2. Magnetic particles - each sample
3. Oversize on appropriate screen - each sample

The presence of any hard particles (those which cannot be broken with a spatula) in the oversize should be noted and called to the attention of production supervision. Whenever possible, these particles should be microscopically examined and identified (burned resin, reactor glass, metal, rust, etc.).

E. Bulk Shipment Samples

Bulk shipment testing by Quality Control is designed primarily to assure that the correct product type has been loaded, that product quality has not deteriorated in storage or transfer, and that specific customer requirements not covered by in-process testing are met. This testing is not designed to "approve" or grade material.

The specific lot or type of material to be loaded is designated by production scheduling. If a lot graded "E" (or a lot outside of a specific customer's specification) is to be loaded, name of the person giving the approval should be noted on the loading sheet. This will generally be the appropriate Marketing Manager, but, in the case of high volatiles only, may be a member of Production Management.

Sampling of bulk shipments is covered in detail in a Plant Standard Operating Procedure. Testing should be as follows:

1. For bulk trucks, two-pound samples will be submitted representing the top of each hatch loaded. A composite of these samples should be checked for relative viscosity. Each individual sample is to be checked for visual and magnetic contamination. Also, oversize should be checked using the appropriate screen for copolymer testing.
2. For rail cars, samples will be submitted representing the top of each compartment loaded. A composite of these samples should be checked for relative viscosity. Each individual sample is to be checked for visual and magnetic contamination. Also oversize should be checked using the appropriate screen for copolymer testing.
3. Special customer tests, as required by a Customer Instruction Sheet, should be performed as indicated.
4. If any of the test results are out-of-specification (except for those covered by a marketing release of "E" grade material), the shipment will not be released by Quality Control. When such a situation arises, Production and/or Quality Control supervision should be notified immediately. All out-of-specification volatile results should be reported regardless of prior clearance to load. A decision on the release of the shipment will be made in conjunction with Marketing.

F. Testing of Special Production (LOP, SPA, NPI)

All special production should be tested in accordance with the procedure for the specific product, or as outlined in the Special Production Request. If specifications differ from standard, they will be listed in the request. All products made under LOP or SPA should be graded. Product made under NPI is not graded.

G. Additional Testing

If product or in-process testing not covered by this schedule is required, Production supervision or Process Engineering should request such tests in writing, using a Special Test Request form.

Written by: H.R. Horton/W.C. Champion

Issued by:


W.C. Champion
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Supersedes Issue Dated: August 29, 1975