

1.0 PURPOSE:

This specification is intended to outline the material characteristics and overall supplier requirements that must be followed to provide Trilene 65 to Rogers ACM.

Trilene 65 is a viscous low molecular weight ethylene-propylene-dicyclopentadiene liquid polymer. Contract order of precedence shall be: 1) requirements on the purchase order, 2) this specification, 3) any documents referenced within this specification.

2.0 REFERENCES:

Polymer Industry Test Procedures
29 CFR 1910.1200

3.0 SAFETY:

The latest revision of manufacturer MSDS must be provided prior to the initial shipment, when revised or upon request (Per 29CFR 1910.1200). See section 7.8.3.

4.0 APPLICABLE TEST METHODS/DOCUMENTS:

All testing is to be done by the manufacturer. Where specific test procedures are not called out, testing procedures, as recognized by the industry, are to be used in determining the properties listed in the following sections of this specification.

A Certificate of Analysis (C of A) shall show material compliance with the properties as listed in Table 1. C of A shall include actual values where applicable.

A Certificate of Analysis shall be issued for each order as described in section 7.10.

Table I: (Trilene 65 Acceptance Test Requirements)

PROPERTY	REQUIREMENT
Propylene %	45 – 55
Molecular weight (viscosity avg)	5500 – 7200
Diene %	9.0 – 12.0
Volatiles (Heat Loss) %	0.5 max

Table II: Typical Properties -Reference values

PROPERTY	VALUE
Diene % by weight	9.5
E/P ratio by weight	48/52
Molecular weight (viscosity average)	7000
Brookfield Viscosity (cps, RVT#7) @60°C	1,900,000
Brookfield Viscosity (cps, RVT#7) @100°C	177,000
Color	Pale Yellow
Ash	<0.1%
Volatiles 100°C (Heat Loss)	<0.5%
Specific gravity	0.86

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Degree of unsaturation weight & termonomer	9.5
Ethylene/propylene	50/50

5.0 SHIPPING, PACKAGING & LABELING REQUIREMENTS:

Rogers will only accept material that has NOT been repackaged. This will be verified by ensuring the date of manufacture and batch date contained in the lot number match within +/- one day. This was the method instructed by the supplier to detect whether or not material has been repackaged.

Product to be packaged in 55 gallon DOT drums.

Containers are to be protected from damage during shipment.

Each container must be identified with description, lot number, Roger's Purchase Order Number and the vendor's part number.

6.0 SHELF LIFE AND STORAGE REQUIREMENTS

Standard shelf-life of Trilene is five years

If the material being shipped is two years after the DOM, the supplier shall include a retest of the viscosity results on the CofC.

If the material exceeds two years from the DOM, it will be inspected for yellowing. Any discolored material shall be returned at the supplier's cost.

7.0 QUALITY ASSURANCE REQUIREMENTS:

Rogers Corporation reserves the right to test, or have tested, material shipped against this specification.

Rogers Corporation reserves the right to return without penalty to Rogers material that:

7.1.1 Does not conform to this specification.

7.1.2 Is unfit for use due to improper handling by the supplier or its designated carrier(s).

Deviation from any of the requirements outlined in this specification will require written notification to Rogers Supply Chain department and approval from Rogers Quality and Engineering prior to shipping material.

Shipment of any nonconforming material is prohibited, unless prior approval is obtained from Rogers' Quality Assurance and Engineering.

Rogers shall be notified prior to any change in process and/or product composition.

7.1.3 These changes shall include the following:

a) Any change to the process where the defined product characteristics are affected (see Table 1).

b) Any change to product or process chemistries or processing parameters where the defined product characteristics are impacted.

- c) Changes in test method or use of new/different equipment for testing and inspection where the test results obtained need to be correlated in order to ensure consistency in product characteristics.

7.1.4 Any such changes requested by the supplier shall be in writing indicating the reasons for such changes, including affects, costs and performance.

7.1.5 In the event that non-conforming product was to escape to Rogers, the supplier is to notify Rogers Supply Chain department in the most expedient manner possible.

Manufacturer's quality system shall be capable of meeting ISO9000, or equivalent. If material is purchased through a distributor, it is their responsibility to confirm that the manufacturer's quality system meets this requirement.

Failure to notify Rogers for any of the conditions outlined in section 7.5 will be cause for disqualification.

The introduction of new or significantly altered process, equipment or materials will require the supplier to provide qualification methods and data to Rogers Engineering and QA.

7.1.6 Rogers Engineering and QA may elect to qualify new processes or materials.

7.1.7 No material from the introduction of new or altered processes is to be shipped without written approval from Rogers Engineering and QA.

7.1.8 Contact Rogers Corporation Environmental, Health & Safety Office if changes to material are made. An updated MSDS must be included for any changes; electronic format preferred.

Supplier allows Buyer right of access to the supplier's facility for inspection of final product or review of quality records.

7.1.9 If the immediate supplier is a distributor, the supplier must flow Right of Access to the manufacturer.

7.2 Lot Acceptance Test Results:

7.2.1 Certificate of Analysis shall reference

- a) The Material description,
- b) Manufacturer's lot number
- c) Date of Manufacture
- d) Roger's Purchase Order Number, and
- e) Table 1 properties.

7.2.2 A Certificate of Analysis (C of A), showing material compliance with the properties listed in Table 1 and noting conformance to the requirements of this specification, shall be forwarded to Rogers. The Certificate of Analysis shall be electronically transmitted to the following email address, prior to shipment of the material:

quality-mwd@rogerscorporation.com

7.2.3 If the supplier does not have the ability to transmit this information electronically, the Certificate of Analysis showing material compliance with the properties listed in Table 1 and noting conformance to the requirements of this specification, shall be forwarded to Rogers at the address or fax number below. The Certificate of Analysis must be received prior to shipment.

Rogers Corporation
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