

PLASTICS/VPD Technical Committee Document

# Flexible Vinyl Products Division Technical Committee - Laboratory Document Library

Vinyl Products Division:
Plastics Industry Association (PLASTICS)
1425 K St. NW, Suite 500, Washington DC 20005
Printed: March 2, 2021
Doc: FVPD TC LP-0-0-0

#### **NOTE TO USERS**

This document is intended to provide general information on documents available to members of the flexible vinyl market. This document is voluntary and is not designed for use as a standard or specification. The information in the guideline is representative of the customary practices prevailing in the industry today and is based on the collective experience of members of the flexible vinyl industry, but is not intended to be either exhaustive or inclusive of all pertinent information or requirements. The guideline is not intended to be directed to any particular product. The guideline is not intended to provide product or company endorsements, specific advice, legal or otherwise, on particular products, processes, or matters of regulatory compliance.

The information presented here is offered in good faith and believed to be reliable, but is made WITHOUT WARRANTY, EXPRESSED OR IMPLIED, AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER.

Reviewed and Modified by:
PLASTICS/VFD Technical Committee
Last Revision: Jan 2021
Doc: FVPD TC LP-0-0-0

Copyright ©2021 Plastics Industry Association, All Rights Reserved



# Flexible Vinyl Products Division Technical Committee - Laboratory Document Library

#### **CATEGORY 0: OVERVIEW DOCUMENTS**

#### **Topic 1: Specialized Testing**

FVPD TC LP-0-1-1) Overview of Useful Non-routine Analytical Tests for Flexible PVC

#### **CATEGORY 1: RAW MATERIAL TESTING**

#### **Topic 1: Resins**

- FVPD TC LP-1-1-1) Resin Clear Point Temperature (Non-DIN or ASTM)
- FVPD TC LP-1-1-2) Qualitative Evaluation of Resin Static (Non-DIN or ASTM)
- FVPD TC LP-1-1-3) Wet Sieve Analysis of Dry Resin (Or Other Fine Powders)

# **Topic 2: Plasticizers**

- FVPD TC LP-1-2-1) Assessing Plasticizer Odor by an Odor Panel
- FVPD TC LP-1-2-2) Determination of Plasticizer Efficiency (Non-DIN or ASTM)
- FVPD TC LP-1-2-3) Plasticizer Specific Gravity
- FVPD TC LP-1-2-4) Platinum Cobalt (Pt-Co) Color of a Plasticizer
- FVPD TC LP-1-2-5) Test for Plasticizer Thermal Stability (Non-DIN or ASTM)
- FVPD TC LP-1-2-6) Test for Plasticizer VOC Content

# **Topic 3: Pigments**

 FVPD TC LP-1-3-1) Procedure for Determining the Degree of Pigment Flocculation in a Plasticized Pigment Dispersion Using a "Rub-Up" Test

#### **CATEGORY 2: VINYL DISPERSION (PLASTISOL) PREPARATION**

#### **Topic 1: Plastisol Mixing**

- FVPD TC LP-2-1-1) High Shear Mixing Procedure
- FVPD TC LP-2-1-2) Low Shear Mixing Procedure



# **CATEGORY 3: VINYL DISPERSION (PLASTISOL CHARACTERIZATION**

# **Topic 1: Viscosity**

- FVPD TC LP-3-1-0) Overview of Rheological Testing
- FVPD TC LP-3-1-1) Procedure for Measuring the Viscosity of a Vinyl (or Other Liquids) at Low Shear Rates by the Rotational Viscometer
- FVPD TC LP-3-1-2) Procedure for Measuring the High Shear Viscosity of a Vinyl Dispersion by the Severs Extrusion Rheometer

#### **Topic 2: Air Release**

- FVPD TC LP-3-2-0) Overview of Air Release Testing
- FVPD TC LP-3-2-1) Air Release-Spatula Test (Non-DIN or ASTM)
- FVPD TC LP-3-2-2) Procedure for Determining Air Release Using the Foam Test Instrument
- FVPD TC LP-3-2-3) Procedure for Vacuum Rise Air Release Testing (Non-DIN ASTM)
- FVPD TC LP-3-2-4) Procedure for Determining the Speed of Defoaming with Huff (Ring) Instrument
- FVPD TC LP-3-2-5) Procedure for Determining the Air Release Performance of a Vinyl Dispersion by the (Syringe) Injection of an Air Bubble

#### **Topic 3: Volatility**

- FVPD TC LP-3-3-1) Procedure for the Measurement of the VOC Content of Vinyl Dispersion or Contents via EPA Method 24
- FVPD TC LP-3-3-2) Measurement of Non-volatile Content Thin Film Technique (Non-DIN or ASTM)
- FVPD TC LP-3-3-3) Measurement of Non-volatile Content at Elevated Storage Temperatures (Non-DIN or ASTM)

#### **Topic 4: Density / Specific Gravity**

FVPD TC LP-3-4-1) Density and Specific Gravity of Vinyl Dispersions

#### **Topic 5: Grind / North Fineness**

• FVPD TC LP-3-5-1) Grind Gauge (Dispersion) Test



#### **Topic 6: Heat Stability**

- FVPD TC LP-3-6-1) Evaluation of the Static Heat Stability of a Vinyl Dispersion (Non-DIN or ASTM)
- FVPD TC LP-3-6-2) Procedure for Determining the Heat Resistance of Fused Plastisol (Non-DIN or ASTM)

#### **Topic 7: Gelation**

- FVPD TC LP-3-7-1) Hot Bench Gelation Test (Non-DIN or ASTM)
- FVPD TC LP-3-7-2) Procedure for the Determination of the Gelation Characteristics of a Vinyl Dispersion using a Rotational Viscometer (Non-DIN or ASTM)

#### **Topic 8: Pigment / Coloration**

 FVPD TC LP-3-8-1) Procedure for Determining Pigment Separation in Vinyl Dispersions (Non-DIN ASTM)

#### **Topic 9: Surface Tension**

• FVPD TC LP-3-9-1) Procedure for the Measurement of the Surface Tension of Liquid

#### **CATEGORY 4: PROCESSING / FUSION**

#### **Topic 1: Fusion**

- FVPD TC LP-4-1-1) Low Temperature impact Test for Incomplete Plastisol Fusion (Non-DIN or ASTM)
- FVPD TC LP-4-1-2) Test for Incomplete Plastisol Fusion by Ethyl Acetate Immersion (Non-DIN or ASTM)
- FVPD TC LP-4-1-3) Determination of a Vinyl Dispersion's Apparent Viscosity Utilizing a Torque Rheometer at a Constant Mixer Temperature (Non-DIN or ASTM)

#### **Topic 2: Voids / Bubbles**

• FVPD TC LP-4-2-1) Procedure for Determination of the De-aeration of Vinyl Dispersions (Non-DIN or ASTM)

#### **Topic 3: Film Thickness**

 FVPD TC LP-4-3-1) Procedure for Measuring the Wet Film Thickness of a PVC Plastisol (Non-Din or ASTM)



#### CATEGORY 5: FUSED COMPOUND / PART CHARACTERIZATION

## **Topic 1: Migration / Exudation / Extraction**

- FVPD TC LP-5-1-0) Overview of Migration / Exudation / Extraction Testing
- FVPD TC LP-5-1-1) Determining the Degree of Exudation Using Sketch Paper (Non-DIN or ASTM)
- FVPD TC LP-5-1-2) Plasticizer Compatibility by Humidity Aging
- FVPD TC LP-5-1-3) Plasticizer Loop Compatibility Test
- FVPD TC LP-5-1-4) Procedure for Determining an Indication of Exudation using a Clean Glass Jar (Non-Din ASTM)
- FVPD TC LP-5-1-5) Determination of Exudation by Film Adhesion to Aluminum Plate (Non-DIN or ASTM)
- FVPD TC LP-5-1-6) Determining the Degree of Exudation of a Gelled and Fused PVC Film (Non-DIN or ASTM)
- FVPD TC LP-5-1-7) Procedure for Measuring Water Extraction of Plasticized Film -Activated Carbon Technique (Non-DIN or ASTM)
- FVPD TC LP-5-1-8) Procedure for Measuring the Extraction Loss of Plasticized Vinyl Film Immersed in Mineral Oil (Non-DIN or ASTM)
- FVPD TC LP-5-1-9) Determining the Degree of Exudation of a Fused PVC Film in Contact with a Lacquered Surface (Non-DIN or ASTM)

#### **Topic 2: Hardness**

• FVPD TC LP-5-2-1) Measurement of Shore Durometer

# **Topic 3: Surface Characterization**

- FVPD TC LP-5-3-1) Procedure for the Measurement of Surface Gloss of a PVC Film (Non-DIN or ASTM)
- FVPD TC LP-5-3-2) Procedure for the Measurement of Static Surface Tension of a PVC Film
- FVPD TC LP-5-3-3) Procedure for the Measurement of Surface Haze of a PVC Film



## **Topic 4: Color Stability**

 FVPD TC LP-5-4-1) Procedure for Testing Color Stability of Flexible PVC in the Presence of Oxidizing Gases (Non-DIN or ASTM)

# **Topic 5: Mechanical Characterization**

- FVPD TC LP-5-5-1) Tensile Procedure Test
- FVPD TC LP-5-5-2) Procedure for Determining the Amount of Indentation and Indentation Recovery Using a Buchholz Indentation Tester

# **Topic 6: Chemical Analysis**

- FVPD TC LP-5-6-1) Gravimetric Analysis of Flexible PVC Products (Non-DIN or ASTM)
- FVPD TC LP-5-6-2) GC Separation of Plasticizers (Non-DIN or ASTM)

#### **REVISION HISTORY**

Rev <u>.</u>	Date	Revision Details
	Jan 2021	Original issue

