



Designation: D 6887 – 03

Standard Test Method for Testing Alkyd Compatibility with Resin or Resin Solutions¹

This standard is issued under the fixed designation D 6887; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the procedure for determining the degree of compatibility of an alkyd with a specific resin or resin solution.

1.2 The most common use of this method is to test alkyd compatibility with a hydrocarbon resin or a solution of the resin in an aliphatic solvent, for lithographic ink vehicle applications.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 6038 Test Method for Determining the Compatibility of Resin/Solvent Mixtures by Precipitation Temperature²

3. Terminology

3.1 *Definitions:*

3.1.1 *compatibility, n*—resin and solvent mixture forms a clear, homogenous, and stable solution. **D 6038**

3.1.2 *incompatibility, n*—resin and solvent mixture does not form a clear, homogenous, and stable solution.

4. Summary of Test Method

4.1 The required resin to alkyd ratio is mixed into a 150-mL beaker and heated to 160°C until clear and homogenous.

4.2 The solution is placed into pre-labeled jars and cooled.

4.3 Degree of compatibility is reported at 30 min and 24 h after cooling to room temperature.

5. Significance and Use

5.1 Incompatibility of the system can lead to loss of gloss, decreased color strength, rheological problems and grind issues in the flush or pigment base.

5.2 This method is used in the lithographic industry, especially in pigment wetting applications, where the alkyd may or may not be totally compatible with the resin selected for the application.

6. Apparatus

6.1 *Beakers*, 150 mL (4).

6.2 *Jars*, with lids, 4 oz (4).

6.3 *Balance*, capacity of at least 200 g, accurate to ± 0.1 g.

6.4 *Hot Plate*, capable of heating to a minimum of 200°C.

6.5 *Thermometer*, 0 to 200°C, $\pm 1^\circ\text{C}$

6.6 *Spatula*, or stirrer rods.

7. Test Samples

7.1 Alkyd to be tested.

7.2 Resin or resin solution.

8. Procedure

8.1 Label each jar and beaker with the resin, alkyd and ratio being tested.

8.2 Weigh into the beaker the following materials:

Material	Ratio			
	2:1	3:1	4:1	5:1
Resin/Resin Solution	16.0 g	18.0 g	20.0 g	20.0 g
Alkyd	8.0 g	6.0 g	5.0 g	4.0 g

8.3 Place the beakers on the hot plate and heat to 160°C. Stir with spatula or stir rod until clear.

8.4 Pour the blend from each beaker into the appropriately labeled jar then cool to room temperature.

8.5 Wait 30 min then visually observe degree of clarity of each test sample.

NOTE 1—Some applications may require a longer waiting time such as 24 h. If this is the case, record compatibility of the solution after 24 h.

9. Report

9.1 Report the highest ratio where the blend remained clear after 30 min or 24 h (time should be agreed upon by user of this test method and application).

9.2 If the mixtures are clear at all ratios tested, then the resin can be considered compatible to the highest ratio tested.

¹ This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.37 on Ink Vehicles.

Current edition approved March 10, 2003. Published May 2003.

² *Annual Book of ASTM Standards*, Vol 06.03.