



Designation: D 2090 – 98

Standard Test Method for Clarity and Cleanness of Paint and Ink Liquids¹

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1. Scope

1.1 This test method covers a procedure for the visual examination of any unpigmented liquid for use in paints and inks, including fatty oils and acids, drier solutions, solvents, miscellaneous chemicals, varnishes, resin solutions, clear lacquers, and other clear coatings for the presence or absence of undesirable components.

1.2 *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 1003 Test Method for Haze and Luminous Transmittance of Transparent Plastics²
- D 1210 Test Method for Fineness of Dispersion of Pigment-Vehicle Systems³
- D 1545 Test Method for Viscosity of Transparent Liquids by Bubble Time Method⁴

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 There are various terms for clarity or cleanness of liquids, which are established as trade vernacular in describing undesirable components of a liquid. The following seven are preferred over the other terms (in bold face) related to them:

3.1.2 *foreign matter*—any visible material unrelated to the true origin of the liquid specified.

3.1.3 *sediment*—any solid which can settle or be centrifuged from the main portion of the liquid, for example, **foots, meal, grain, gum**.

3.1.4 *skins*—partial solid layers of material which may form, from the material itself or otherwise.

3.1.5 *turbid*—a relatively great amount of nonsettling **floc, gels, suspended matter, particles, droplets**, or other **insoluble** or **separated matter**, even though the liquid is **translucent** and transmits at least a little light.

3.1.6 *hazy*—a relatively small amount of nonsettling, finely dispersed matter which is not visibly homogeneous with the mass of the liquid specified, even though the liquid is **transparent** and transmits most of the light incident upon it.

3.1.7 *clear*—a complete lack of any visible nonuniformity when viewed in mass, in bottles or test tubes, by strong transmitted light.

3.1.8 *clean*—a complete lack of any visible nonuniformity sometimes referred to as **seeds**, when viewed in thin films by any macroscopic or microscopic use of visible light.

4. Summary of Test Method

4.1 The sample is visually examined in its original container, in the specified sample containers, and then in a film thin enough to show any nonuniformity.

5. Significance and Use

5.1 The results of the clarity and cleanness examinations are used as controls in production, and for specification acceptance of any nonpigmented liquid used in paints and inks.

6. Sampling

6.1 Sampling of one or more containers of a liquid is especially important for the validity of a clarity or cleanness test, and each type of container, such as tank car, tanktruck, drum, carboy, etc., requires its own detailed sampling procedure. Temperature conditions and periods affect amounts of solidified matter which may form, or volatilized matter lost, such as phosphatides, waxes, or high melting acids solidified from fatty oils or acids, or low boiling solvents volatilized from varnishes, resin solutions, etc. Therefore, the precise mechanics, the date, time and temperature of sampling, the type of sample container and the temperature of the container, light, and any other critical sample storage conditions shall be specified.

7. Conditioning Sample

7.1 Because limits may be desired on the amounts of gums or other solids which will separate from a liquid very slowly at various temperatures, specify limits of a time and temperature

¹ This test method is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D 01.33 on Polymers and Resins.

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² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ *Annual Book of ASTM Standards*, Vol 06.03.