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Standard Specification for Drycleaning Detergent, Liquid Charge Type¹

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^{ε1} NOTE—Sections were rearranged editorially in March 1989.

1. Scope

1.1 This specification covers liquid drycleaning detergents of the charge type. It is not meant to rate them. Its purpose is to exclude detergents that might be deleterious to the drycleaning procedure.

2. Referenced Documents

2.1 ASTM Standards:

D 484 Specification for Hydrocarbon Drycleaning Solvents²

D 2553 Test Method for Detecting Odor of Drycleaning Detergent on a Drycleaned Garment³

D 2554 Test Method for Flash Point of Drycleaning Detergents in the Drycleaning Bath³

2.2 Federal Specification:

O-P-191 Prechloroethylene, Tetrachloroethylene Technical Grade⁴

3. Terminology

3.1 Definitions:

3.1.1 *charge*—a term referring to the detergent concentration in a charge system.

3.1.2 *charge system*—drycleaning using a bath containing a given percentage of detergent by volume which can pass through the filter without charge in composition.

3.1.3 *solvent relative humidity*—the relative vapor pressure of water in drycleaning solvent.

3.1.4 *two bath*—a system for drycleaning utilizing a wash in a concentrated detergent solution followed by a rinse in a solution much more free of detergent.

4. Ordering Information

4.1 The material shall be purchased by net volume of detergent as received.

5. General Requirements

5.1 The drycleaning detergents shall be classified as follows:

5.1.1 *Anionic Drycleaning Detergent*—A drycleaning de-

tergent that produces negatively charged colloidal ions in solution.

5.1.2 *Cationic Drycleaning Detergent*—A drycleaning detergent that produces positively charged colloidal ions in solution.

5.1.3 *Nonionic Drycleaning Detergent*—A drycleaning detergent that produces uncharged colloidal particles in solution.

5.1.4 *Ampholytic Drycleaning Detergent*—A drycleaning detergent that is cationic in acid media and anionic in basic media.

5.1.5 *Amphoteric Drycleaning Detergent*—An ampholytic drycleaning detergent.

5.1.6 The solution referred to would be in drycleaning solvent at 75 % relative humidity and 24°C (75°F).

5.2 The drycleaning detergent composition shall be completely and easily soluble in drycleaning solvents at normal use concentrations (up to 4 %) and at normal use temperatures of 2 to 32°C (35 to 90°F).

5.3 Odor in a drycleaned garment cannot be tolerated. Since in most drycleaning operations some residue of the detergent is still present on the garment after cleaning, the detergent is objectionable if the residue it leaves on a dried garment after a normal drycleaning emits an odor. Determination shall be made in accordance with Test Method D 2553.

NOTE—If a two-bath usage is specified by the manufacturer, it shall be considered a normal drycleaning.

5.4 The detergent shall be homogeneous and free of undissolved matter and have a storage life of 6 months at temperatures normal to a drycleaning plant (2 to 32°C) (35 to 90°F).

5.5 The flash point of a 4 % solution of the detergent dissolved in drycleaning solvent shall be not lower than the flash point of the drycleaning solvent itself. Determination shall be made in accordance with Test Method D 2554.

5.6 A solution of the detergent in drycleaning solvent shall be capable of being distilled by methods normally applied in the industry to yield a distillate containing only the drycleaning solvent.

5.6.1 When the drycleaning solvent used is Stoddard solvent, then the distillate shall conform to Specification D 484. When the drycleaning solvent used is perchloroethylene then the distillate shall conform to Federal Specification O-P-191.

5.7 Detergent dissolved in drycleaning solvent shall not be removable by filtration through the filter paper of a drycleaning-type cartridge filter or diatomaceous earth; it shall not cause a pressure drop across this filter paper or the diatomaceous earth filter cake (formed by filtering the solution) to

¹ This specification is under the jurisdiction of ASTM Committee D-12 on Soaps and Other Detergents and is the direct responsibility of Subcommittee D12.13 on Analysis of Drycleaning Materials.

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² Discontinued, see 1982 Annual Book of ASTM Standards, Part 23.

³ Annual Book of ASTM Standards, Vol 15.04.

⁴ Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, PA 19120.