



Standard Guide for Selecting Cleaning Agents and Processes¹

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^{ε1} NOTE—Editorial changes were made throughout in May 2004.

1. Scope

1.1 This guide is intended to assist design engineers, manufacturing/industrial engineers, and production managers in selecting the best fit cleaning agent and process. This guide takes into account environmental pollution prevention factors in a selection process.

1.2 This guide is not to be considered as a database of acceptable materials. It will guide the engineers and managers through the cleaning material selection process, calling for engineers to customize their selection based on the cleaning requirements for the cleaning tasks at hand. If a part can be cleaned, and kept clean, it can be cycled through several process steps that have cleaning requirements. This eliminates extra cleaning process steps during the total process. A total life cycle cost analysis or performance/cost of ownership study is recommended to compare the methods available.

1.3 This guide is for general industry manufacturing, equipment maintenance and remanufacturing operations, and to some extent precision cleaning of mechanical parts and assemblies. It is not intended to be used for optical, medical, or electronics applications, nor is it intended for dry-cleaning or super-critical fluid cleaning.

2. Referenced Documents

2.1 ASTM Standards:²

- D 56 Test Method for Flash Point by Tag Closed Tester
- D 92 Test Method for Flash and Fire Point by Cleveland Open Cup
- D 93 Test Methods for Flash Point by Pensky-Martens Closed Cup Tester
- D 2240 Test Method for Rubber Property—Durometer Hardness

¹ This guide is under the jurisdiction of ASTM Committee D26 on Halogenated Organic Solvents and Fire Extinguishing Agents and is the direct responsibility of Subcommittee D26.03 on Cold Cleaning.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

- D 3167 Test Method for Floating Roller Peel Resistance of Adhesives
- D 3278 Test Methods for Flash Point of Liquids by Set-aflash Closed-Cup Apparatus
- D 3519 Test Method for Foam in Aqueous Media (Blender Test)
- D 3601 Test Method for Foam Aqueous Media (Bottle Test)
- D 3707 Test Method for Storage Stability of Water-in-Oil Emulsions by the Oven Test Method
- D 3709 Test Method for Stability of Water-in-Oil Emulsions Under Low to Ambient Temperature Cycling Conditions
- D 3762 Test Method for Adhesive-Bonded Surface Durability of Aluminum (Wedge Test)
- E 70 Test Method for pH of Aqueous Solutions with the Glass Electrode
- E 1720 Test Method for Determining Ready, Ultimate Biodegradability of Organic Chemicals in a Sealed Vessel, CO₂ Production Test
- F 483 Test Method for Total Immersion Corrosion Test for Aircraft Maintenance Chemicals
- F 484 Test Method for Stress Cracking of Acrylic Plastics in Contact With Liquid or Semi-Liquid Compounds
- F 485 Test Method for Effects of Cleaners on Unpainted Aircraft Surfaces
- F 502 Test Method for Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces
- F 519 Test Method for Mechanical Hydrogen Embrittlement Evaluation of Plating Processes and Service Environments
- F 945 Test Method for Stress-Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials
- F 1104 Test Method for Preparing Aircraft Cleaning Compounds, Liquid Type Water Base, for Storage Stability Testing
- F 1110 Test Method for Sandwich Corrosion Test
- F 1111 Test Method for Corrosion of Low Embrittling Cadmium Plate by Aircraft Maintenance Chemicals
- G 44 Practice for Exposure of Metals by Alternate Immersion in Neutral 3.5 % Sodium Chloride Solution
- G 121 Practice for Preparation of Contaminated Test Coupons for Evaluation of Cleaning Agents