



Designation: D4579 – 00 (Reapproved 2023)

Standard Practice for Handling an Acid Degreaser or Still¹

This standard is issued under the fixed designation D4579; 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 reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers the procedures required for recognizing and handling an acid vapor degreaser or still.

1.2 If the degreaser(s) is equipped with a still, follow the procedure in this practice for all of the equipment.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D2110 Test Method for pH of Water Extractions of Halogenated Organic Solvents and Their Admixtures

D2942 Test Method for Total Acid Acceptance of Halogenated Organic Solvents (Nonreflux Methods)

D3698 Practice for Solvent Vapor Degreasing Operations

D4276 Practice for Confined Area Entry

2.2 *Federal Regulations:*³

29 CFR 1910.146, Permit-Required Confined Spaces

3. Terminology

3.1 *Definitions:*

3.1.1 *acid degreaser, n*—an acid degreaser is the result of the decomposition of the degreasing solvent to acid products.

¹ This practice is under the jurisdiction of ASTM Committee **D26** on Halogenated Organic Solvents and Fire Extinguishing Agents and is the direct responsibility of Subcommittee **D26.02** on Vapor Degreasing.

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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.

³ Available from U.S. Government Publishing Office, 732 N. Capitol St., NW, Washington, DC 20401, <http://www.gpo.gov>.

4. Significance and Use

4.1 This practice describes the symptoms and causes of an acid degreaser as well as methods for correcting the problem.

4.2 This practice is intended as a reference for use by persons responsible for the operation or maintenance of vapor degreasers or stills.⁴

4.3 This practice is not intended to cover every possible situation.

5. Symptoms of an Acid Degreaser/Still

5.1 An acid condition in a vapor degreaser may be recognized by one or more of the following symptoms:

5.1.1 A strong acid odor.

5.1.2 A dense white smoke in the vapor zone.

5.1.3 An unusually dark brown to black-colored solvent in the degreaser sumps.

5.1.4 Dark spots and pitting of aluminum parts after degreasing.

5.1.5 Rusting of mild steel parts immediately after removal from the degreaser.

5.1.6 New formation of green deposits on copper condensing coils or chiller coils.

5.1.7 Newly formed blush rusting of stainless steel degreaser components, especially welded seams.

5.1.8 Low pH of solvent as determined by Test Method **D2110** by water extraction or a low acid acceptance of the solvent as determined by Test Method **D2942**, or both.

5.1.9 Severe pitting and corrosion inside water separator.

6. Possible Causes of an Acid Degreaser

6.1 It is rare for a solvent vapor degreaser to go acid when properly operated and maintained. An acid degreaser can result from any one or a combination of the following causes:

6.2 *Lack of Proper Maintenance*—If a degreaser is not cleaned out on a regular basis, the accumulations of soluble and insoluble contaminants, especially reactive white metal chips (for example, aluminum), can cause both thermal and chemical breakdown of the solvent resulting in the generation of hydrochloric acid.

⁴ See also Practice **D3698**.