



Designation: G126 – 16

Standard Terminology Relating to the Compatibility and Sensitivity of Materials in Oxygen Enriched Atmospheres¹

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1. Scope

1.1 This terminology defines terms related to the compatibility and sensitivity of materials in oxygen enriched atmospheres. It includes those standards under the jurisdiction of ASTM Committee G04.

1.2 The terminology concentrates on terms commonly encountered in and specific to practices and methods used to evaluate the compatibility and sensitivity of materials in oxygen. This evaluation is usually performed in a laboratory environment, and this terminology does not attempt to include laboratory terms.

2. Referenced Documents

2.1 ASTM Standards:²

- D2863 Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- G63 Guide for Evaluating Nonmetallic Materials for Oxygen Service
- G72 Test Method for Autogenous Ignition Temperature of Liquids and Solids in a High-Pressure Oxygen-Enriched Environment
- G74 Test Method for Ignition Sensitivity of Nonmetallic Materials and Components by Gaseous Fluid Impact
- G86 Test Method for Determining Ignition Sensitivity of Materials to Mechanical Impact in Ambient Liquid Oxygen and Pressurized Liquid and Gaseous Oxygen Environments
- G88 Guide for Designing Systems for Oxygen Service
- G93 Practice for Cleaning Methods and Cleanliness Levels for Material and Equipment Used in Oxygen-Enriched Environments

- G94 Guide for Evaluating Metals for Oxygen Service
- G114 Practices for Evaluating the Age Resistance of Polymeric Materials Used in Oxygen Service
- G120 Practice for Determination of Soluble Residual Contamination by Soxhlet Extraction
- G121 Practice for Preparation of Contaminated Test Coupons for the Evaluation of Cleaning Agents
- G122 Test Method for Evaluating the Effectiveness of Cleaning Agents
- G124 Test Method for Determining the Combustion Behavior of Metallic Materials in Oxygen-Enriched Atmospheres
- G125 Test Method for Measuring Liquid and Solid Material Fire Limits in Gaseous Oxidants
- G128 Guide for Control of Hazards and Risks in Oxygen Enriched Systems
- G131 Practice for Cleaning of Materials and Components by Ultrasonic Techniques
- G136 Practice for Determination of Soluble Residual Contaminants in Materials by Ultrasonic Extraction
- G144 Test Method for Determination of Residual Contamination of Materials and Components by Total Carbon Analysis Using a High Temperature Combustion Analyzer
- G145 Guide for Studying Fire Incidents in Oxygen Systems

3. Terminology

3.1 Definitions:

aging, *n*—the exposure of a material to stress, such stress of which may include time, pressure, temperature, abrasion, ionizing radiation, light, impact with gas or particles, tensile or compressive force (either static or cyclic), or any other feature that may be present individually or in combination.

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accelerated aging, *n*—a type of artificial aging whereby the effect of prolonged exposure during service is stimulated by aging at elevated temperature.

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artificial aging, *n*—aging in which a stress variable is outside the domain of exposure that a material might see in a component for oxygen service or in which an alternative mechanism is used to produce an effect that simulates the results of natural aging.

¹ This terminology is under the jurisdiction of ASTM Committee G04 on Compatibility and Sensitivity of Materials in Oxygen Enriched Atmospheres and is the direct responsibility of Subcommittee G04.02 on Recommended Practices.

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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.