



Standard Guide for Studying Fire Incidents in Oxygen Systems¹

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1. Scope

1.1 This guide covers procedures and material for examining fires in oxygen systems for the purposes of identifying potential causes and preventing recurrence.

1.2 This guide is not comprehensive. The analysis of oxygen fire incidents is not a science, and definitive causes have not been established for some events.

1.3 The procedures and analyses in this guide have been found to be useful for interpreting fire events, for helping identify potential causes, and for excluding other potential causes. The inclusion or omission of any analytical strategy is not intended to suggest either applicability or inapplicability of that method in any actual incident study.

NOTE 1—Although this guide has been found applicable for assisting qualified technical personnel to analyze incidents, each incident is unique and must be approached as a unique event. Therefore, the selection of specific tactics and the sequence of application of those tactics must be conscious decisions of those studying the event.

NOTE 2—The incident may require the formation of a team to provide the necessary expertise and experience to conduct the study. The personnel analyzing an incident, or at least one member of the team, should know the process under study and the equipment installation.

1.4 **Warning**—During combustion, gases, vapors, aerosols, fumes, or combinations thereof, are evolved, which may be present and may be hazardous to people. **Caution**—Adequate precautions should be taken to protect those conducting a study.

1.5 *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:²

- E620 Practice for Reporting Opinions of Scientific or Technical Experts
- E678 Practice for Evaluation of Scientific or Technical Data
- E860 Practice for Examining And Preparing Items That Are Or May Become Involved In Criminal or Civil Litigation
- E1020 Practice for Reporting Incidents that May Involve Criminal or Civil Litigation
- E1138 Terminology for Technical Aspects of Products Liability Litigation (Withdrawn 1995)³
- E1188 Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator
- E1459 Guide for Physical Evidence Labeling and Related Documentation
- E1492 Practice for Receiving, Documenting, Storing, and Retrieving Evidence in a Forensic Science Laboratory
- G63 Guide for Evaluating Nonmetallic Materials for Oxygen Service
- 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
- G124 Test Method for Determining the Combustion Behavior of Metallic Materials in Oxygen-Enriched Atmospheres
- G126 Terminology Relating to the Compatibility and Sensitivity of Materials in Oxygen Enriched Atmospheres
- G128 Guide for Control of Hazards and Risks in Oxygen Enriched Systems

¹ This guide 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.

³ The last approved version of this historical standard is referenced on www.astm.org.