



AMERICAN NATIONAL STANDARD

ANSI/ASSE Z390.1 – 2017
Accepted Practices for
Hydrogen Sulfide (H₂S) Training Programs

ANSI/ASSE Z390.1 – 2017



AMERICAN SOCIETY OF
SAFETY ENGINEERS

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ANSI/ASSE Z390.1 – 2017

American National Standard

**Accepted Practices for
Hydrogen Sulfide (H₂S) Training Programs**

Secretariat

American Society of Safety Engineers
520 N. Northwest Highway
Park Ridge, Illinois 60068

Approved June 30, 2017

American National Standards Institute, Inc.

American National Standard

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Foreword

(This Foreword is not a part of American National Standard Z390.1-2017.)

The charter of the American National Standard Committee Z390 on Hydrogen Sulfide (H₂S) Training was accredited by the American National Standards Institute (ANSI) on January 1, 1993. This standard grew out of the recognition of a need for specialized training dealing with this toxic chemical, above and beyond conventional hazard communications training, due to numerous fatal accidents involving victims and their would-be rescuers succumbing to the effects of hydrogen sulfide.

Historically, H₂S training issues have been addressed by only a few industries, and the consistency of the training criteria varied greatly from one organization to another. For these reasons, the standard addresses the individual training criteria that should be incorporated into a comprehensive training course. These criteria were developed by combining accepted practices in numerous affected industries. Most significantly, emphasis has been given to the qualifications and proficiency of individual H₂S safety instructors, as well as student performance-based competency and qualifications.

The guidelines presented in this document are designed to provide workers the fundamental knowledge to protect themselves from H₂S exposure. This document does not include the information necessary to satisfy the requirements of the ANSI/ASSE Z88.2, *Practices for Respiratory Protection*, and OSHA Respiratory Protection 29 CFR 1910.134. In addition, this document does not provide the site-specific information necessary to work at a particular facility.

Governmental regulations (see OSHA Hazard Communication 29 CFR 1910.1200) specify mandatory requirements for the training of personnel working with or around hazardous chemicals. As a voluntary consensus standard, this document complements those regulations. However, compliance with this standard does not assure compliance with governmental regulations, and vice versa.

The Z390 Committee solicits public input that may suggest revisions to the standard. Such input should be sent to the Secretariat, American Society of Safety Engineers, 520 N. Northwest Highway, Park Ridge, Illinois 60068.

Revisions: The Z390 Committee welcomes proposals for revisions to this standard. Revisions are made to the standard periodically (usually every five years from the date of the standard) to incorporate changes that appear necessary or desirable, as demonstrated by experience gained from the application of the standard. Proposals should be as specific as possible, citing the relevant section number(s), the proposed wording, and the reason for the proposal. Pertinent documentation would enable the Z390 Committee to process the changes in a timely manner.

Interpretations: Upon a request in writing to the Secretariat, the Z390 Committee will render an interpretation of any requirement of the standard. The request for interpretation should be clear, citing the relevant section number(s) and phrased as a request for a clarification of a specific requirement. Oral interpretations are not provided.

Only the Z390 Committee (through the Z390 Secretariat) is authorized to provide any interpretation of this standard.

Approval: Neither the Z390 Committee nor the American National Standards Institute (ANSI) approves, certifies, rates or endorses any item, construction, proprietary device or activity.

Appendices: Appendices are included in most standards to provide the user with additional information related to the subject of the standard. Appendices are not part of the approved standard.

Committee Meetings: The Z390 Committee meets on a regular basis. Persons wishing to attend a meeting should contact the Secretariat for information.

Standard Approval: This standard was developed and approved for submittal to ANSI by the American National Standards Committee on H₂S Training, Z390. Committee approval of the standard does not necessarily imply that all members voted for its approval. At the time of its approval, the Z390 Standards Committee had the following members:

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AMERICAN NATIONAL STANDARD Z390.1 ACCEPTED PRACTICES FOR HYDROGEN SULFIDE (H₂S) TRAINING PROGRAMS

1. Scope, Purpose and Application

1.1 Scope

This standard sets forth accepted practices for hydrogen sulfide (H₂S) safety training and instruction of affected personnel to include, but not be limited to, the following:

- minimum informational content of the course
- recommended exercises and drills
- properties and characteristics of H₂S
- sources of H₂S and areas of potential exposure
- typical site-specific safe work practices associated with H₂S operations
- detection methods for H₂S
- engineering/mitigation controls
- properties, characteristics and safe work practices of sulfur dioxide (SO₂)
- selection, use and care of personal protective equipment appropriate for atmospheres containing H₂S concentrations above the applicable occupational exposure limit
- rescue techniques and first aid procedures for victims of H₂S exposure
- H₂S Safety Instructor qualifications

1.2 Purpose

The purpose of this standard is to establish minimum requirements for H₂S safety training programs that will enhance safety in occupational settings where H₂S is present, or is recognized as being potentially present, above the applicable occupational exposure limit.

1.3 Application

This standard is recommended for voluntary application in occupational settings where personnel have the potential to be exposed to concentrations of H₂S in excess of the applicable occupational exposure limit. The applicable occupational exposure limit is determined by the employer or facility referencing consensus standards, regulations and health safety and environmental (HSE) professionals.

2. Definitions

2.1 Acute Exposure

Exposures to high concentrations over a short period of time.

2.2 Chronic Exposure

Exposures to low concentrations over a long period of time.

2.3 Contingency Plan

A site-specific written document that provides an organized plan for alerting and protecting workers and the public within an area of exposure following the accidental release of a potentially hazardous atmospheric concentration of H₂S.