

NFPA[®]

704

Standard System for the
Identification of the
Hazards of Materials
for Emergency Response

2022



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NFPA® 704

Standard System for the

Identification of the Hazards of Materials for Emergency Response

2022 Edition

This edition of NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, was prepared by the Technical Committee on Classification and Properties of Hazardous Chemical Data. It was issued by the Standards Council on October 14, 2020, with an effective date of November 3, 2020, and supersedes all previous editions.

This edition of NFPA 704 was approved as an American National Standard on November 3, 2020.

Origin and Development of NFPA 704

Work on this standard originated in 1957. A great deal of the development work had been done by the NFPA Sectional Committee on Classification, Labeling, and Properties of Flammable Liquids starting in 1952. Background data were published by the association in its quarterly magazine in 1954, 1956, and 1958. The material in its present form was first tentatively adopted in 1960. Official adoption was secured in 1961, and revisions were adopted in 1964, 1966, 1969, 1975, 1980, and 1985. In the 1987 and 1990 editions, the Committee on Fire Hazards of Materials introduced quantitative guidelines for assigning the Health Hazard and Reactivity Hazard Ratings. The 1996 edition introduced additional quantitative guidelines and an amended definition for *instability hazard rating*, formerly *reactivity hazard rating*.

The 2001 edition clarified numerous topics, including the following: rating of mixtures; three options of how to rate areas with multiple chemical storage and use; location of signs; more quantitative criteria for flammability ratings for solids; and quantitative criteria for a flammability rating of zero, including introduction of a new test method. Guidance material was added for quantifying the degree of water reactivity. An annex was added to cover water reactivity and identification criteria, as well as additional information on flash point test methods.

The 2007 edition clarified topics including the special hazards quadrant and placement and hierarchy of symbols. The new simple asphyxiant (SA) designation and other optional symbols, as well as requirements for the classification of flammability rating for dusts, were added.

The 2012 edition included reinstatement of the differential scanning calorimetry (DSC) hazard criterion to Table 7.2 as well as new guidance on the flammability hazard classification for aerosol products. The 2012 edition also included new text in Table 6.2 that emphasized the use of Annex D to classify the flammability hazard of a finely divided solid.

In 2017 information related to differential scanning calorimetry (DSC) exotherm onset temperature criteria was removed from Table 7.2. Chapter 8 was modified to require the use of the SA symbol for liquefied carbon dioxide vapor withdrawal systems and where large quantities of dry ice are used in confined areas. Annex G was added to explain key differences between the OSHA HazCom 2012 and NFPA 704. Annex H was added to provide sample placards that can be extracted into emergency response publications and training materials.

The 2022 edition of the standard includes revisions to Figures 9.1(b) and 9.1(c) that provide guidance on NFPA 704 placard and numeral dimension and size requirements.

Technical Committee on Classification and Properties of Hazardous Chemical Data

Ron A. Kirsch, *Chair*
OHS Associates, Inc., TN [SE]

Robert A. Michaels, *Secretary*
RAM TRAC Corporation, NY [SE]

Christopher Allen, Montgomery County Government, MD [E]
Jason Beam, CCB, Inc., ME [U]
David L. Bowman, Bowman Global Enterprise Group, FL [SE]
Laurence G. Britton, Process Safety Consultant, WV [SE]
Laura Draelos, Sandia National Laboratories, NM [U]
Nelson C. Dunston, Laboratory Corporation of America, NC [RT]
David W. Hollinger, Drexel University, PA [U]
Caroline Miller, UL LLC/ChemADVISOR, Inc., NY [SE]
Robert A. Nocco, Chevron, CA [U]
Brian Ott, Exponent, CA [SE]
Nissan Patel, Jefferson Parish Fire Services, LA [E]
David T. Phelan, Township of North Bergen - NJ, NJ [E]

Christopher M. Platz, Abington Township, PA [E]
Brian Primeau, MIT Lincoln Labs, MA [RT]
Mark L. Robin, Chemours, DE [M]
William J. Satterfield, III, Hydrogen Safety, LLC/Rode & Associates, LLC, RI [I]
Stephen Sides, American Coatings Association, DC [M]
James O. Vigerust, Jr., CB&I, NM [SE]
David B. Wechsler, Consultant, TX [U]
Rep. American Chemistry Council
Cynthia J. Wernet, The Boeing Company, CA [U]
Rep. NFPA Industrial Fire Protection Section
Ryan Wyse, Hebron Fire Department, OH [E]

Alternates

Karl Leipold, AIG Energy & Engineered Risk, MD [I]
(Voting Alt.)

Brenda Prine, Elora, ON, Canada [SE]
(Alt. to Laurence G. Britton)

Nonvoting

Jennifer H. Lawless, US Department of Labor, DC [E]

Lawrence Russell, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on the classification of the relative hazards of all chemical solids, liquids and gases and to compile data on the hazard properties of these hazardous chemicals.

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NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced and extracted publications can be found in Chapter 2 and Annex I.

Chapter 1 Administration

1.1 Scope. This standard shall address the health, flammability, instability, and related hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies.

1.2 Purpose.

1.2.1 This standard shall provide a simple, readily recognized, and easily understood system of markings that provides a general idea of the hazards of a material and the severity of these hazards as they relate to emergency response.

1.2.2 The objectives of the system shall be as follows:

- (1) To provide an appropriate signal or alert and on-the-spot information to safeguard the lives of both public and private emergency response personnel
- (2) To assist in planning for effective fire and emergency control operations, including cleanup
- (3) To assist all designated personnel, engineers, and plant and safety personnel in evaluating hazards

1.2.3 This system shall provide basic information to fire-fighting, emergency, and other personnel, enabling them to easily decide whether to evacuate the area or to commence emergency control procedures.

1.2.4 This system also shall provide those personnel with information to assist in selecting fire-fighting tactics and emergency procedures.

1.2.5 Local conditions can have a bearing on evaluation of hazards; therefore, discussion shall be kept in general terms.

1.3 Application.

1.3.1 This standard shall apply to industrial, commercial, and institutional facilities that manufacture, process, use, or store hazardous materials.

1.3.2* This standard shall not apply to transportation or use by the general public and is not intended to address the following:

- (1) Occupational exposure
- (2) Explosive and blasting agents, including commercial explosive material as defined in NFPA 495
- (3) Chemicals whose only hazard is one of chronic health hazards
- (4) Teratogens, mutagens, oncogens, etiologic agents, and other similar hazards

1.4 Retroactivity. The provisions of this standard reflect a consensus of what is necessary to provide an acceptable degree of protection from the hazards addressed in this standard at the time the standard was issued.

1.4.1 Unless otherwise specified, the provisions of this standard shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. Where specified, the provisions of this standard shall be retroactive.

1.4.2 In those cases where the authority having jurisdiction determines that the existing situation presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively any portions of this standard deemed appropriate.

1.4.3 The retroactive requirements of this standard shall be permitted to be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction and only where it is clearly evident that a reasonable degree of safety is provided.

1.5 Equivalency. Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

1.5.1 Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency.

1.5.2 The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.