NATIONAL
STANDARD
OF CANADA

CAN/ULC-S560:2006-R2016
(Reaffirmed 2016)

STANDARD FOR CATEGORY 3 AQUEOUS FILM-FORMING FOAM (AFFF) LIQUID CONCENTRATES

Prepared and Published by:

ULC Standards
Normes ULC

Approved by:

Standards Council of Canada
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The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for this particular application.

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NATIONAL STANDARD OF CANADA

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ICS 13.220.10; 13.220.99

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STANDARDS COUNCIL OF CANADA

Standards Council of Canada
Conseil canadien des normes

First Edition . . . . . September 1998
Second Edition . . . . . April 2006
REAFFIRMATION . . . . . APRIL 2016

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M. Ramlochan	ULC Standards	Canada	Project Manager (Non-Voting)

This list represents the membership at the time the Committee balloted on the final text of this edition. Since that time, changes in the membership may have occurred.

REFERENCE PUBLICATIONS

The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such reference shall be considered to indicate the edition and/or revisions of the document available at the date on which the Committee approved this ULC Standard.

Document Published by the American Public Health Association (APHA)
1015 15th Street NW, Suite 300, Washington, DC 20005, U. S. A.
Telephone: (202) 777-2742 Fax: (202) 777-2534
www.apha.org

- Standard Methods for the Exam of Water and Wastewater

Documents Published by the American Society for Testing and Materials (ASTM)
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Telephone: (610) 832-9585 Fax: (610) 832-9555
www.astm.org

- ASTM A 240/A 240M-05a, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
- ASTM B 466/B 466M-03, Standard Specification for Seamless Copper-Nickel Pipe and Tube
- ASTM D 96-88 (Reapproved 1994), Standard Test Method for Water and Sediment in Crude Oil by Centrifuge Method (Field Procedure)
- ASTM D 445-04, Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- ASTM D 638-03, Standard Test Method for Tensile Properties of Plastics
- ASTM D 1141-98 (Reapproved 2003), Standard Practice for the Preparation of Substitute Ocean Water
- ASTM D 1177-05, Standard Test Method for Freezing Point of Aqueous Engine Coolants
- ASTM D 1193-99, Standard Specification for Reagent Water
- ASTM D 1298-99 (Reapproved 2005), Standard Test Method for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method
- ASTM D 1331-89 (Reapproved 2001), Standard Test Methods for Surface and Interfacial Tension of Solutions of Surface-Active Agents
- ASTM D 1693-05, Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics
- ASTM E 70-97 (Reapproved 2002), Standard Test Method for pH of Aqueous Solutions with the Glass Electrode
- ASTM E 205-96 (Reapproved 2000), Standard Specification for Glass and Oxygen Combustion Flask

- ASTM E 527-83 (Reapproved 2003), Standard Practice for Numbering Metals and Alloys (UNS)
- ASTM E 729-96 (Reapproved 2002), Standard Guide for Conducting Acute Toxicity Tests on Test Materials with Fishes, Macroinvertebrates, and Amphibians
- ASTM G 26-96, Standard Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials

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Documents Published by the Canadian General Standards Board (CGSB)
Canadian General Standards Board, Gatineau, QC K1A 1G6 Canada
Telephone: (819) 956-0425 or 1-800-665-2472
www.pwgsc.gc.ca/cgsb

- CAN/CGSB-3.25-2004, Amendment No. 1, Aviation Gasoline (Grades 80 and 100 LL)

Document Published by the National Fire Protection Association (NFPA)
1 Batterymarch Park, Quincy, MA 02269-9101, U.S.A.
Telephone: (617) 770-3000 Fax: (617) 770-0700
www.nfpa.org

- NFPA 412-2003, Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment

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Document Published by Transport Canada
330 Sparks Street, Ottawa, ON K1A 0N5 Canada
Telephone: (613) 990-2309 Fax: (613) 954-4731
www.tc.gc.ca

- Transportation of Dangerous Goods Regulations

Documents Published by Underwriters' Laboratories of Canada (ULC)
7 Underwriters Road, Toronto, ON M1R 3B4 Canada
Telephone: (416) 757-3611 or 1-866-9373-ULC
www.ulc.ca

- CAN/ULC-S514-M88, Standard for Dry Chemical for Use in Hand Wheeled Fire Extinguishers
- CAN/ULC-S563-06, Standard for Category 3 Film-Forming Fluoroprotein (FFFP) Foam Liquid Concentrates
- ULC-S564-06, Standard for Categories 1 and 2 Foam Liquid Concentrates

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STANDARD FOR CATEGORY 3 AQUEOUS FILM-FORMING FOAM (AFFF) LIQUID CONCENTRATES

PREFACE

This is the Second Edition of the Standard for Category 3 Aqueous Film-Forming Foam (AFFF) Liquid Concentrates, CAN/ULC-S560.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fire Fighting Foams.

This Standard has been developed in compliance with the requirements of SCC for accreditation of a Standards Development Organization.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

This Second Edition National Standard of Canada has been reaffirmed.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. ULC Standards shall not be held responsible for identifying any or all such patent rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

The review and action to revise or reaffirm this Standard will not exceed 5 years from the date of publication, unless the Standard is identified as fitting within a stabilized category, whereby the review will commence within the appropriate time frame set out by ULC Standards.

This Standard is intended to be used for conformity assessment.

1. SCOPE

1.1 The Standards for foam liquid concentrates are divided into three categories.

Category 1	Category 2	Category 3
Primarily for use on general-purpose hydrocarbon fires	Primarily for use on polar solvents, oxygenated fuels, and water-miscible fuels and all Category 1 applications	Primarily for use on aircraft rescue fire fighting and all Category 1 applications

This Standard refers to Category 3 Aqueous Film-Forming Foam (AFFF) Liquid Concentrates.

NOTE: The requirements for Category 3 Film-Forming Fluoroprotein (FFFP) Foam Liquid Concentrates are contained in the Standard CAN/ULC-S563.

1.2 The foam liquid concentrate, at 1 %, 3 %, or 6 % dilution with fresh or sea water are intended primarily for use in aircraft rescue and firefighting vehicles (ARFF) but are also suitable for use in mobile, portable and fixed airfoam installations, including foam-water sprinkler systems which have been proven suitable to meet the requirements of the Standard for Categories 1 and 2 Foam Liquid Concentrates, ULC-S564, in surface extinguishment of fires involving ordinary hydrocarbon flammable liquids.

1.3 These requirements do not supersede requirements prescribed in legislation or regulation by the authority having jurisdiction.

NOTE: Reference to each applicable Test Method for a requirement is indicated by the letters TM and the appropriate Clause or Section number in parentheses in the right hand margin.

2. CLASSIFICATION

2.1 Aqueous film-forming foam (AFFF) liquid concentrate shall be supplied in one of the following types:

A 1 % foam concentrate (to be diluted 1 part concentrate, 99 parts water) by volume; or

B 3 % foam concentrate (to be diluted 3 parts concentrate, 97 parts water) by volume; or

C 6 % foam concentrate (to be diluted 6 parts concentrate, 94 parts water) by volume.