Canadian General Standards Board
Office des normes générales du Canada

CGSB

3-GP-850a
4 March 1960

(F)3-GP-850a
4 Mars 1960

CANCELLATION

October 1978

CANADIAN GENERAL STANDARDS BOARD

Specification for

ANTIFREEZE, AIRCRAFT ENGINE

This specification has been cancelled because, as far as could be determined, it was no longer being used.

ANNULATION

Octobre 1978

OFFICE DES NORMES GÉNÉRALES DU CANADA

Norme

ANTIGEL POUR MOTEUR D'AÉRONEFS

Cette norme a été annulée parce que, dans la mesure où il a été possible de le constater, elle n'était plus utilisée.

Supply Information and Data Management Branch
Direction de la gestion des données et de l'information sur les approvisionnements

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Ottawa, Canada K1A 1G6

Canada

3-GP-850a
4 March 1960
AMENDMENT NO. 1
31 December 1963

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Specification
for

COOLANT; AERO ENGINE

TITLE* - Cover Page and Page 1 - Change to read:

ANTIFREEZE: Aircraft Engine

Withdrawn/Retirée

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* This revised title is in accordance with NATO Codified Nomenclature.

CANADA

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

SPECIFICATION

FOR

COOLANT; AERO ENGINE

3-GP-850A

4 MARCH 1960

SUPERSEDES 3 - GP - 850
21 DECEMBER 1951

Withdrawn/Retirée

THIS SPECIFICATION APPLIES TO ONE TYPE OF INHIBITED ETHYLENE GLYCOL FOR USE IN COOLANT MIXTURES FOR AIRCRAFT ENGINES.

NATIONAL RESEARCH COUNCIL, OTTAWA, CANADA

Price

15 CENTS

For the convenience of those wishing to purchase publications of the Canadian Government Specifications Board, a coupon system has been introduced in order to make payment for these publications relatively simple. Coupons are available in denominations of 5c., 25c., and 50c. and may be obtained by forwarding a remittance to the National Research Council in the form of Bank, Express, or Post Office Money Order, or a cheque made payable at par in Ottawa, to Receiver General of Canada, credit National Research Council (stamps are not acceptable). These coupons can then be used when submitting orders for publications. An Index of Specifications can be obtained on request.

COMMITTEE ON SPECIFICATIONS FOR
PETROLEUM AND ASSOCIATED PRODUCTS

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*Senior Consultant to the Division of Mechanical Engineering
as of April 1957

Withdrawn/Retirée

3-GP-850a
4 March 1960
Supersedes 3-GP-850
21 December 1951

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Specification
for

COOLANT, AERO ENGINE

Withdrawn/Retirée

1. DEFINITION

1.1 This specification applies to one type of inhibited ethylene glycol for use in coolant mixtures for aircraft engines.

1.2 For information on uses see Section 7.1.

2. APPLICABLE PUBLICATIONS

2.1 The following publications are applicable to this publication:

2.1.1 CGSB 3-GP-0, Methods of Testing Petroleum and Associated Products.

2.1.2 ASTM Standards on Engine Antifreezes.

2.1.3 CGSB Specification 3-GP-855, Ethylene Glycol.

2.2 Reference to the above publications is to the issues in effect on the date of invitation to tender, unless otherwise specified.

3. GENERAL REQUIREMENTS

3.1 The material shall be prepared by the addition of phosphoric acid, triethanolamine, sodium mercaptobenzothiazole (NaMBT) and the sodium salt of fluorescein to ethylene glycol.

3.2 The material shall be a clear liquid, yellow in color with a distinct green fluorescence; it shall be free from sediment and visible impurities.

4. COMPOSITION REQUIREMENTS

4.1 The coolant shall be a homogeneous blend of the following components in the proportions shown:

	Per cent by Weight	
	Min	Max
Ethylene glycol	93.95	-
Sodium mercaptobenzothiazole	0.2	0.3
Triethanolamine phosphate	2.25	2.75
Total water	2.5	3.0

4.2 The ethylene glycol used shall comply with the requirements of CGSB Specification 3-GP-855.

4.3 The inhibitor, free from sediment, shall be added in the form of a freshly prepared aqueous solution containing about 50 per cent by weight of NaMBT prepared from pure sodium hydroxide and mercaptobenzothiazole of at least 98 per cent purity. The addition of not more than 1 per cent of sodium sulfite to the aqueous solution, as a stabilizer, is permitted.

4.4 The triethanolamine used shall be the commercial mixture of mono-, di- and triethanolamine, freed as necessary from chloride and sulfate. It shall be added in sufficient quantity to comply with the requirement of Section 5.3.

4.5 The phosphoric acid used shall contain at least 85 per cent H_3PO_4. Sufficient shall be added to comply with the requirement of Section 5.2.

4.6 The sodium salt of fluorescein shall be added in quantity equivalent to 0.0083 grams of the salt in 100 ml of the finished material (1-11/32 ounces per 100 Imperial gallons).

5. DETAIL REQUIREMENTS

NOTE: Requirements contained herein are absolute and not subject to corrections for tolerance of test methods. However, if multiple determinations are made, average results will be used.

The material shall comply with the following detail requirements:

		Min	Max	Test Method
5.1	NaMBT, per cent by weight	0.2	0.3	3-GP-0/95.1
5.2	Phosphate content, per cent by weight as H_3PO_4	0.56	0.62	3-GP-0/94.1
5.3	pH of 50 per cent (by vol) finished coolant in water	7.2	7.8	3-GP-0/3.2
5.4	Boiling Point, °F	329	-	ASTM D1120
5.5	Freezing Point of 50 per cent (by vol) finished coolant in water, °F	-	-22	ASTM D1177
5.6	Ash, per cent by weight	-	0.52	ASTM D1119
5.7	Sulfate Content, per cent by weight as SO_4	-	0.01	3-GP-0/105.3
5.8	Chloride Content, per cent by weight as Cl	-	0.01	3-GP-0/105.4
5.9	Specific Gravity, 60°F/60°F	1.11	1.12	ASTM D1122

Withdrawn/Retirée

6. INSPECTION

6.1 Qualification Tests - Tests for qualification shall consist of tests for all requirements of this specification except for the requirements given in 4.1 and 4.6.

6.2 Acceptance Tests - Acceptance tests shall consist of tests for all requirements of this specification except for the requirements given in Section 4.

6.3 Sampling

6.3.1 Qualification Test Samples - A sample of not less than one Imperial quart of the finished material shall be provided for qualification tests and shall be obtained in accordance with ASTM D1176, Sampling and Preparing Aqueous Solutions of Engine Antifreeze. In addition an 8-ounce sample of the NaMBT and one Imperial pint samples of the ethylene glycol, phosphoric acid and triethanolamine shall also be supplied.

6.3.2 Acceptance Test Sample - A sample of not less than one Imperial quart of finished material shall be provided for acceptance tests and shall be obtained in accordance with ASTM D1176, Sampling and Preparing Aqueous Solutions of Engine Antifreeze.

6.4 Testing - The methods of testing shall be those in CGSB 3-GP-0 or in ASTM Standards on Engine Antifreezes as specified, using the procedure specified with each requirement.

7. NOTES

7.1 Intended Uses - The aero-engine coolant is intended for use as a noncorroding, nonvolatile component of coolants and antifreezes in aircraft engines.

7.2 Related CGSB Specifications - Other grades of this material are covered by CGSB Specification 3-GP-854, Antifreeze; Ethylene Glycol.

7.3 Other Related Specifications - At the time of publication, the undernoted documents were corresponding specifications (but not necessarily equivalent):

7.3.1 U.S. Military Specification MIL-E-5559, Ethylene Glycol; (Antifreeze and Cooling Liquid for Aircraft Engines).

7.3.2 British Ministry of Supply Specification DTD 779, Inhibited Ethylene Glycol.

7.3.3 British Standards Institute Specification BS3150, Corrosion Inhibited Ethanediol Antifreeze for Water Cooled Engines, Type A, Triethanolammonium orthophosphate and sodium mercaptobenzothiozole inhibited.

7.4 Copies of publications listed in Section 2 may be obtained as follows:

7.4.1 CGSB 3-GP-0 and Specification 3-GP-855: Canadian Government Specifications Board, National Research Council, Ottawa 2, Canada.

7.4.2 ASTM Standards: American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa., U.S.A.

7.5 Qualification Procedure - Information regarding the procedure for the qualification of aero-engine coolant to this specification in connection with Department of National Defence purchases may be obtained from: Air Member for Technical Services, Royal Canadian Air Force Headquarters, Ottawa, Canada.

Correspondence regarding this specification should be addressed to the Secretary, Canadian Government Specifications Board, National Research Council, Ottawa 2, Canada.

Withdrawn/Retirée