BS 5117 : Section 1.4 : 1985

UDC 661.17:621.43–715.4:620.197.3

British Standard

Testing corrosion inhibiting, engine coolant concentrate ('antifeeze')

Part 1. Methods of test for determination of physical and chemical properties

Section 1.4 Determination of foaming characteristics

Essais du liquide de refroidissement anti-rouille du moteur (antigel)
Partie 1. Méthodes d'essai de détermination des propriétés physiques et chimiques
Section 1.4 Détermination des propriétés de moussage

Prüfung von korrosionshemmendem Kühlmittelkonzentrat für Motoren (Frostschutzmittel)
Teil 1. Prüfverfahren zur Bestimmung der physikalischen und chemischen Eigenschaften
Abschnitt 1.4 Bestimmung der Schäumeeigneschaften

NOTE. It is recommended that this Section be read in conjunction with the information given in the 'General Introduction' published separately as BS 5117 : Part 0.

Contents

1 Scope

This Section of BS 5117 describes a method for determination of foaming characteristics of solutions of engine coolant concentrate.

NOTE 1. The engine coolant concentrate is referred to hereafter as 'the product'.

NOTE 2. The method as described is intended for the determination of the foaming characteristics of solutions prepared from the product as supplied but the procedure may be adapted for solutions obtained from engine cooling systems, test rigs, etc.

NOTE 3. The titles of the publications referred to in this standard are listed on the inside back page.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

2 Principle

A test portion is aerated under specified conditions and the volume of the foam produced and the time taken for the foam to collapse is measured.

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3 Reagents

3.1 *General.* The reagents used shall be of a recognized analytical grade. Water complying with BS 3978 shall be used throughout.

3.2 *Chromic-sulphuric acid mixture* or *suitable surfactant solution.* *

3.3 *Acetone.*

3.4 *Clean compressed air,* capable of being supplied at a rate of 1000 ± 50 mL/min.

4 Apparatus

4.1 *General.* The apparatus described in **4.2** to **4.11** is required. The items described in **4.4** to **4.9** are shown in figure 1.

4.2 *One-mark volumetric flask,* of 500 mL capacity, complying with class A of BS 1792.

4.3 *Burette,* of 100 mL capacity, complying with class A of BS 846.

4.4 *Measuring cylinder,* of 500 mL capacity, internal diameter 40 mm to 50 mm, made of heat resistant glass.

4.5 *Glass beaker,* of 5000 mL capacity.

4.6 *Gas distribution tube,* consisting of a tube, length 300 mm, fitted with a domed sintered glass bulb having an effective area equivalent to a flat plate of 20 mm diameter and maximum pore diameter 40 μm to 50 μm.†

4.7 *Three-way stopcock,* with inlet connected to the air supply and one outlet connected to the gas distribution tube (**4.6**) and the other vented to the atmosphere.

4.8 *Electric hot plate,* approximately 750 W.

4.9 *Thermometer,* designated F150C/76, complying with BS 593.

4.10 *A means of controlling the air flowrate at* 1000 ± 50 mL/min.

4.11 *Stopwatch,* reading to an accuracy of ± 0.2 s.

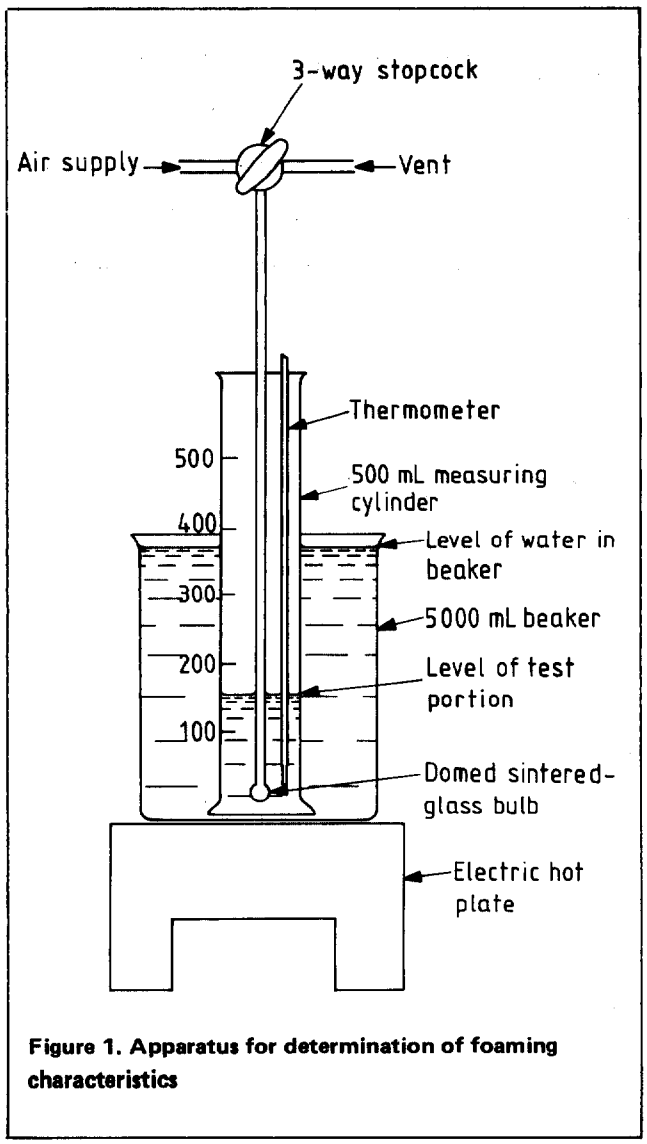

Figure 1. Apparatus for determination of foaming characteristics

*Decon 90 has been found suitable.

†A 'Sintaglas' gas distribution tube No. GFD-750-050C, manufactured by A. Gallenkamp and Company Limited, has been found suitable.