DIN EN 1568-3:2018-05 (E)

Fire extinguishing media - Foam concentrates - Part 3: Specification for low expansion foam concentrates fo r surface application to water-immiscible liquids

Contents

Page

European foreword ... 5

Introduction ... 7

1 Scope ... 8

2 Normative references ... 8

3 Terms and definitions ... 9

4 Sediment in the foam concentrate ... 10
4.1 Sediment before ageing ... 10
4.2 Sediment after ageing ... 11

5 Freezing point ... 11

6 Viscosity of the foam concentrate ... 11
6.1 Newtonian foam concentrates ... 11
6.2 Pseudo-plastic foam concentrates ... 11

7 pH of the foam concentrate ... 11

8 Surface tension of the foam solution ... 11

9 Stability/separation test of foam concentrate ... 11

10 Determination of expansion and drainage time ... 11
10.1 Before temperature conditioning ... 11
10.2 After temperature conditioning ... 12

11 Test fire performance ... 12

12 Evaluation of aqueous film formation ... 13

13 Occupational health and ecotoxicological information ... 13

14 Technical data sheet ... 13

15 Container marking ... 14

Annex A (informative) Grades of foam concentrate and performance ... 15

A.1 Grades ... 15

A.2 Typical performance ... 15

Annex B (normative) Sampling of foam concentrates ... 17

Annex C (normative) Determination of percentage sediment ... 18

C.1 Sampling ... 18

C.2 Apparatus ... 18

C.3 Procedure ... 18

Annex D (normative) Determination of Viscosity for pseudo-plastic foam concentrates ... 19

D.1 Pseudo-plastic foam concentrates ... 19

D.2 Viscosity determination ... 19

D.2.1 Apparatus ... 19

D.2.2 Test temperatures 19
D.2.3 Viscosity measurement 19
D.2.4 Results 20
Annex E (normative) Temperature conditioning of foam concentrates 21
E.1 General 21
E.2 Low temperature conditioning 21
E.2.1 Apparatus 21
E.2.2 Procedure 21
E.3 High temperature conditioning 21
E.3.1 Apparatus 21
E.3.2 Procedure 21
E.4 Division into top and bottom half-samples 22
E.4.1 Apparatus 22
E.4.1.1 Top half-sample container(s) 22
E.4.1.2 Divider device 22
E.4.2 Procedure 23
Annex F (normative) Determination of surface tension 24
F.1 Solution of foam concentrate 24
F.2 Procedure — Surface tension 24
Annex G (normative) Determination of expansion and drainage time 25
G.1 Apparatus 25
G.2 Temperature conditions 25
G.3 Procedure 25
G.4 Simulated fresh and sea water 26
Annex H (normative) Determination of test fire performance 30
H.1 General 30
H.2 General conditions 30
H.2.1 Test series and criteria for success 30
H.2.1.1 Foam concentrates not compatible with sea water 30
H.2.1.2 Foam concentrates compatible with sea water 30
H.2.2 Temperature and wind speed 30
H.2.3 Records 30
H.2.4 Foam solution 31
H.2.5 Fuel 31
H.3 Gentle application fire test 32
H.3.1 Apparatus 32

H.3.2 Test procedure 32
H.4 Forceful application fire test 33
H.4.1 Apparatus 33
H.4.2 Procedure 33
Annex I (informative) Small scale fire test 35
I.1 Apparatus 35
I.2 Test procedure 35
I.2.1 Test conditions 35
I.2.2 Set up 36
I.2.3 Fire test 36
Annex J (informative) Description of a radiation measurement method 45
J.1 Evaluation 45
J.2 General arrangement of test 45
J.3 Technical data for radiometers 46
J.4 Procedure 47
Annex K (normative) Freezing point determination 49
K.1 General 49
K.2 Apparatus 49
K.3 Procedure 49
K.4 Example of a temperature against time curve for evaluation 50
Annex L (normative) Evaluation of film formation 51
L.1 Sampling 51
L.2 Apparatus 51
L.3 Materials 51
L.4 Procedure 51
Annex M (normative) Stability/Separation test of foam concentrate 53
M.1 General 53
M.2 Apparatus 53
M.3 Procedure 53
Annex N (normative) Occupational health and ecotoxicological testing 54
Annex O (informative) Example for a technical data sheet 55
Annex P (informative) A-Deviations 57
Bibliography 59