



Engineering Material Specification

Material Name

GREASE, HIGH TEMPERATURE - WATERPROOF WITH FILLER

Specification Number

ESA-M1C45-A

1. SCOPE

The material defined by this specification is a lithium soap, waterproof, high temperature grease, with zinc oxide filler and an extreme pressure additive.

2. APPLICATION

This specification was released originally for grease used as a lubricant for automotive parts requiring resistance to water and high temperatures.

3. REQUIREMENTS

- | | | |
|-----|---|-------------------------------|
| 3.1 | DROPPING POINT, min
(ASTM D 566) | 183°C |
| 3.2 | VISCOSITY OF MINERAL OIL AT 37.8°C, min
(ASTM D 445 and D 446) | 151.0 cSt(mm ² /s) |
| 3.3 | LITHIUM SOAP
(ASTM D 128) | 6 - 8% |
| 3.4 | WORKED PENETRATION, (mm/10)
(ASTM D 217) | 310 - 340 |
| 3.5 | FILLERS, min
(ASTM D 128) | 8% |
| 3.6 | TIMKEN TEST, min
(FLTM BJ 1-2) | 22 lb (10 kg) |
| 3.7 | OXIDATION TEST, PRESSURE DROP max
(ASTM D 942, 100 hours) | 5 psi (34 kPa) |
| 3.8 | WATER SOLUBILITY | |

The material when applied on metal strips at a thickness of 1/16 in. (1.6 mm) shall withstand 168 hours at 38°C ± 1°C in a 98% ± 2% relative humidity atmosphere without breaking.

3.9 SUPPLIER'S RESPONSIBILITY

Material supplied to this specification must be equivalent to that originally approved. Changes in formulation or processing shall not be made without prior approval as described in Supplier Procedure I-A.

Date	Para. No.	Revisions	Approval
1979 01 10		Metricated and Retyped CAH2-82 3385	E.P. Jones 11-30-79
1963 07 03		Released AS2-304	

1978 11 30
Eng Res
June 77 3948-a

Page 1 of 2

9009160 0001348 369



4. APPROVAL OF SUPPLIERS

Suppliers to this specification must be approved by the affected Product Engineering Office. Procedure for gaining approval of a specific material to a new/existing ES-M specification is contained in Supplier Procedure I-A. Approved new suppliers will be added to the Engineering Materials Approved Source List.

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1978 11 30

Eng Res
June 77 3948-b

Page 2 of 2

9009160 0001349 2T5

