

BREOX BCF-RANGE

INTRODUCTION

BREOX Brake Coating Fluids (BCF) are high quality synthetic products formulated from high molecular weight polyalkylene glycols, anti-oxidant and anti-rust additives, for the prevention of corrosion to brake components. Brake system components will corrode and deteriorate if stored in humid conditions, to prevent this occurrence **BREOX BCF's** provide a protective film of excellent durability.

APPLICATIONS

In addition to excellent humid corrosion protection, brake coating fluids need to comply with some viscosity and rubber swelling requirements which depend upon the product application such,

- as an assembly fluid (the parts are dipped into the fluid prior to being assembled to make the various system units i.e. master cylinder, wheel cylinder, etc.)
OR
- as a testing fluid (the various brake components - master cylinder, wheel cylinders - are tested hydraulically with a testing fluid and then drained before shipping or storage).

The products in the BREOX range designed for high performance in these application areas are **BREOX BCF 7** and **BREOX BCF 11**, both have similar compositions and differ only in their viscosity characteristics.

TYPICAL PROPERTIES

| Physical Attribute | Analysis Method | Value and Unit | |
|--------------------|-----------------|----------------|-----------|
| | | BCF 7 | BCF 11 |
| Viscosity @ 40°C | ASTM 445 | 65cSt | 250cSt |
| Water | ASTM D1744 | 0.1% wt. | 0.1% wt. |
| Ash | ASTM D128 | 0.01% wt. | 0.02% wt. |
| Flash point | ASTM D92 | 240°C | 230°C |

CORROSION TESTS

The following specimens were used under the climatic conditions of DIN 50017 for corrosion testing performance of BREOX BCF 7 & 11.

- CAST IRON (GG25) – 75x20x1mm as used in the Swiss Army Brake Fluid Corrosion Test (pt 19 of the ALN.NSA9150-335-4274 specification.)
- ALUMINIUM – as in the SAE J 1703 specification for brake fluids.

The test specimens were immersed for 1 minute in the fluids, then suspended vertically, to allow the fluid to drain overnight, then suspended vertically in a humidity cabinet.

| Product | No. of Cycles | | | |
|---------|---------------|-----------|----------------|--------------|
| | 3 cycles | | 9 cycles | |
| | CAST IRON | ALUMINIUM | CAST IRON | ALUMINIUM |
| BCF 7 | NO CORROSION | | Few rust spots | NO CORROSION |
| BCF 11 | NO CORROSION | | Some corrosion | NO CORROSION |

ELASTOMER COMPATIBILITY

| Test 3 days | Physical Change | Value and Unit | |
|----------------------|-------------------|----------------|--------|
| | | BCF 7 | BCF 11 |
| SBR 120°C 3 Days | Volume Increase | +12% | +1% |
| | Hardness Increase | -6 | -3 |
| SBR 70°C 3 Days | Volume Increase | +8% | +1% |
| | Hardness Increase | -1 | -1 |
| EPDM 120°C 3 Days | Volume Increase | 0 | -1% |
| | Hardness Increase | -2 | -1 |
| EPDM 70°C 3 Days | Volume Increase | 0 | -1% |
| | Hardness Increase | 0 | -1 |

Remarks

Handling & Safety:

A material Safety Data Sheet (MSDS) has been issued describing the health, safety and environmental characteristics of the BREOX BCF range of products together with handling precautions and emergency procedures. This must be consulted and fully understood before storage, handling and use.

Storage:

BREOX BCF 7-11 Aug '01

Revision-No.

2.4-08.2004 Effective August 17, 2004

The product can be stored for at least 2 years at ambient storage conditions and temperature without any deterioration.

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