

April 1, 2020


**CERTIFICATION**

We hereby certify that samples of the material identified below by batch number, have been analyzed in accordance with test methods that meet and/or exceed the detection limits for fluoride, chloride, and sulfur per ASME Boiler and Pressure Vessel Code, Section V, Article 6, paragraph T-641, 1998 through 2019 Editions and Addenda, with the following results:

|                  |                | <b>FLUORIDE</b>        | <b>CHLORIDE</b>        | <b>SULFUR</b>          |
|------------------|----------------|------------------------|------------------------|------------------------|
|                  |                | <b>ASTM E165</b>       | <b>ASTM E165</b>       | <b>ASTM E165</b>       |
|                  |                | <b><u>ANNEX 4</u></b>  | <b><u>ANNEX 4</u></b>  | <b><u>ANNEX 4</u></b>  |
| <b>DUBL-CHEK</b> | <b>MPF</b>     | <b>&lt;0.0001 % BW</b> | <b>&lt;0.0001 % BW</b> | <b>&lt;0.0001 % BW</b> |
| <b>BATCH NO.</b> | <b>027-C60</b> |                        |                        |                        |

We further certify that this material meets or exceeds the requirements of ASTM E1444, MIL-I-6868E, A-A-59230, ASTM E709, and AMS 2641.

**SHERWIN INCORPORATED**

  
**Q.C. Laboratory**

Revision: August 2005

**CERTIFICATE OF CONFORMANCE**

April 1, 2020

Product: MPF – Magnetic Particle Fluid


Batch No.: 027-C60

It is hereby certified that this material has been manufactured in accordance with, and conforms to ASTM E1444, MIL-STD-1949, A-A-59230 and AMS 2641 Type I. Results of the required quality conformance tests are listed below.

| <u>Test Description</u>                    | <u>Results</u> |
|--|----------------|
| Flash point i.a.w. ASTM D93                | 222°F          |
| Viscosity i.a.w. ASTM D445 at 100 ± 1°F    | 2.74 cSts      |
| Background fluorescence                    | Conforms       |
| Fluoride content i.a.w. ASTM E165, Annex 4 | 0.0001% BW     |
| Chloride residue i.a.w. ASTM E165, Annex 4 | 0.0001% BW     |
| Sulfur residue i.a.w. ASTM E165, Annex 4   | 0.0001% BW     |

It is further certified that this material meets the requirements of ASME B&PV Code Section V and ASTM E709.

**Sherwin Incorporated**

  
**Q.C. Laboratory**

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