SHERWIN
INCORPORATED
5530 Borwick Avenue • South Gate, CA 90280 • (562) 861-6324 FAX (562) 923-8370
www.sherwininc.com • email: sherwin@sherwininc.com

January 31, 2018

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 - 2017 Editions and addenda, with the following results:

		FLUORIDE ASTM E165 ANNEX A4	CHLORIDE ASTM E165 ANNEX A4	SULFUR ASTM E165 ANNEX A4
DUBL-CHEK	**ER-83A**	**<0.0001%BW**	**<0.0001%BW**	**<0.0001%BW**
BATCH NO.	**830-A36**			

We further certify that this material meets or exceeds the requirements of AMS 2644, MIL-I-25135, Revision E and ASTM E1417.

Copies of the certification and laboratory reports are on file in our office for your inspection.

SHERWIN INCORPORATED

Emad Assar

Emad Assar
R&D Chemist

Revision: August 2001

DUBL-CHEK PENETRANT PROCESS

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CERTIFICATE OF CONFORMANCE

Date: January 31, 2018

Product: ER-83A

Batch No.: 830-A36

Method D

It is hereby certified that this material has been manufactured in accordance with, and conforms to, AMS 2644. Results of the required quality conformance tests, as stipulated by paragraph 4.3.2, are listed below.

Test Method Paragraph	Test Description	Results
3.3.3	Flash point i.a.w. ASTM D93	210°F
3.3.4	Viscosity i.a.w. ASTM D445 at 100 ± 1°F	36.17 cStS
3.3.8.6	Removability	Conforms
3.3.9.6	Water content (Method D only)	0.09%
---	Fluoride content i.a.w. ASTM E165, Annex 4	<0.0001%BW
---	Chloride content i.a.w. ASTM E165, Annex 4	<0.0001%BW
---	Sulfur content i.a.w. ASTM E165, Annex 4	<0.0001%BW

It is further certified that this material is listed or approved for listing on QPL-AMS-2644. It also meets the requirements of MIL-I-25135E, ASTM E1417, and MIL-STD-6866.

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SHERWIN INCORPORATED

Emad Assar
R&D Chemist

Revision: January 2000

DUBL-CHEK PENETRANT PROCESS

SUPPLIER'S REPORT---TEST RESULTS

Please forward in duplicate to:
REPORTS, MATERIALS CONTROL LABORATORY
PRATT & WHITNEY
(Plant to which material is shipped)

This is to certify that Paragraph Number (s)...1&5. . .apply to the shipment described below; (Insert at least one of the first 4, plus 5 if applicable.)

1. (Applicable to all raw material, to parts made from raw material furnished or purchased by Supplier, or to assemblies of which some or all components are made from raw materials furnished or purchased by Supplier.) Material, parts, or components of assemblies have been inspected and accepted to the specifications involved, and results of tests required Pratt & Whitney are as shown herein.

2. (Applicable to parts or assembly components made from raw material furnished by Pratt & Whitney and not chemically or metallurgically treated by Supplier so as to change surface or internal condition significantly.) Parts or assemblies have been machined or formed from material furnished by Pratt & Whitney , to make these parts or components of assemblies.

3. (Applicable to parts or assembly components made from raw material furnished by Part & Whitney and chemically or metallurgically treated by Supplier so as to change surface or internal condition significantly.) Parts or components of assemblies have been made from raw material furnished by Pratt & Whitney to make these parts or components of assemblies. Parts, components of assemblies, or assemblies have been inspected and accepted to the specifications involved, and results of tests required by Pratt Whitney are as shown herein.

4. (Applicable to repaired or reworked raw material, parts, or assemblies.) The raw material, parts or assemblies have been reworked or repaired in accordance with Pratt & Whitney instructions, and are the same material, parts or assemblies returned for such reworking or repair, except for replacement of assembly components, in which case paragraphs 1 and 5 are also applicable.

5. (Applicable to all assemblies, and to parts when specifically authorized by purchaser.) Results of all chemical and physical tests not shown below, as well as all other evidence which shows acceptability of raw materials and assembly components, are on file and available for inspection of any reasonable time.

PART OR ASS'Y NO. (Size, if no part No.)	CHG. LTR	SUF. NO.	SPECIFICATIONS, AS ORDERED*		
PMC-4355-3 Revision AM			PWA 300		
QUANTITY	DATE SHIPPED	LOCATION OF PWA. PLANT SHIPPED TO		PACK. SLIP NO.	P.O. NO.
HEAT, LOT, CODE OR BATCH	RAW MATERIAL SUPPLIER	TYPE-COMPOUND OR CASTING	PWA HEAT CODES (If required)		
ER-83A 830-A36					

*If material, parts or assemblies do not entirely conform to specification requirements, the deviation, and authority for furnishing such material are indicated below:

RESULTS OF TESTS (Use reverse side if necessary)

PHYSICAL PROPERTIES

	Actual Testing Results		PMC Limits	
			Minimum	Maximum
Flash point -	210°F	200°F	---	
Viscosity -	36.17 cStS		31.00 cSts	39.83 cSts
Water content -	0.09%		---	1%

CHEMICAL PROPERTIES

Fluoride content -	<0.0001%	---	≤0.0050%
Chloride content -	<0.0001%	---	≤0.0400%
Sulfur content -	<0.0001%	---	≤0.1000%
Sodium content -	<0.0002%	---	≤0.0100%

We hereby certify that this product meets the requirements of PMC-4355-3.

SUPPLIER NAME	BY *(Authorized Agent)*
Sherwin Incorporated	Emad Assar
SUPPLIER ADDRESS	
5530 Borwick Ave. South Gate, Ca. 90280	Emad Assar R&D Chemist

PWA FORM 3297 1/04