# Zyglo Developer ZP-4B

Date: 03/19/2021
Purchase Order:
Batch #: 21C044

It is hereby certified that when tested at the time of manufacture, the above listed material and batch number meets the requirements of and has been tested for Sulfur and Halogens according to:

- ASME Boiler and Pressure Vessel Code, Section V, 2004, 2007, 2010, 2013, 2015, 2017, and 2019 Edition, Nondestructive Examination, including 2005, 2006, 2008, 2009b, and 2011a Addenda, Article 6 Paragraph T-641 and Article 24 as applicable.
- ASME Boiler and Pressure Vessel Code, 1995, 1998 and 2001 Edition, Section V Nondestructive Examination, including 1999, 2000, 2002 and 2003 Addenda, Article 6 Paragraph T-640 and Article 24 as applicable.
- ASME Boiler and Pressure Vessel Code, 1986, 1989 and 1992 Edition, Section V , Nondestructive Examination, Article 6 including 1992 Addenda, Paragraph T-625, 1993 Addenda Paragraph T-640 and Article 24 as applicable.
- ASTM E-165-92, ASTM E-165-94, ASTM E-165-95, ASTM E-165-02,ASTM E-165-09, ASTM E-165/E-165M-12, ASTM E-165/E-165M-18, Paragraph 7.1.
- MIL-STD-271F(SH) June 27, 1986, Paragraphs 5.3 and 5.3.1, including Notice 1 Paragraph 5.6.1 June 21, 1993.
- NAVSEA T9074-AS-GIB-010/271( April 30, 1997 including Notice 1, September 11, 2014 Rev. 1) Paragraphs 5.3.1 and 5.6.2
- MIL-STD-2132D, February 11, 2003, Paragraphs 7.1, 7.1.2 and 7.1.3, Appendix C, Paragraph 40.

The following test results were obtained:

Sulfur 123 ppm 0.0123 wt., % of residue. CL+F 83.569 ppm 0.0084 wt., % of residue

Cleaner residue (see note 3) NA g/100g NA g/100ml

It is further certified that this material does not contain mercury as a basic element and that no mercury bearing equipment has been used in its manufacture.

Notes:
1. Our batch number appears on the bottom of all aerosol cans and on the label of all bulk containers.
2. Most specifications require test results to be stated in percent but some require parts per million (ppm). To convert “percent” figures to “parts per million” move the decimal four places to the right.
3. The above certification gives the results obtained at the time of manufacture. Age and use may alter the properties of any material.

Mathew Plamoottil
Quality Assurance Manager
155 Harlem Ave.
Glenview, IL 60025
P: 1-847-657-5300

Laurie Marx
Quality Control Manager

MAGNAFLUX

Certification

# Zyglo Developer ZP-4B

Date: 03/19/2021
Purchase Order:
Batch #: 21C044

It is hereby certified that the above listed inspection material and batch number meets the requirements of AMS 2644H and is approved by the U.S. Air Force as listed on QPL-AMS-2644

When tested according to paragraph 4.3.2, Sampling Plan A, the following test results were obtained:

- 4.2.2.1 Penetrant Tests:

| | | |
|---|---|---|
| Flash Point (PMCC), 3.3.3 | NA | º F |
| Viscosity, 3.3.4 ( cs. Nominal) | NA | cs@100 º F |
| Fluorescent Brightness, 3.3.8.3.3(FP-4PE Standard) | NA | % |
| Water Tolerance (Method A), 3.3.8.5 | NA | % |
| Water Tolerance (Method B, D), 3.3.8.5 | NA | |
| Removability, 3.3.8.6 | NA | |
| Water Content, 3.3.8.7 | NA | % |

- 4.2.2.1 Emulsifier Tests:

| | | |
|---|---|---|
| Flash Point (PMCC), 3.3.3 | NA | º F |
| Viscosity, 3.3.4 ( cs. Nominal) | NA | cs@100 º F |
| Water Content (Method D Only), 3.3.9.6 | NA | % |

- 4.2.2.3 Developer Tests:

| | | |
|---|---|---|
| Developer Fluorescence, 3.3.10.2 | PASS | |
| Developer Removability, 3.3.10.4 | PASS | |
| Redispersibility, 3.3.10.5 | NA | |

- 3.3.11.4 Remover Tests:

| | | |
|---|---|---|
| Penetrant Removal, 4.4.11.2 | NA | |

It is further certified that this material meets the requirements of ASTM E 1417, Paragraph 5.1.

Batch Numbers appear on labels of bulk containers and on bottoms of aerosol cans.

Mathew Plamoottil
Quality Assurance Manager

Laurie Marx
Quality Control Manager

155 Harlem Ave.
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P: 1-847-657-5300

Date: 03/19/2021

Purchase Order:

**VENDOR'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)_____ apply to the shipment 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 vendor, or to assemblies of which some or all components are made from raw material furnished or purchased by vendor.) Material, parts, or components of assemblies have been inspected and accepted to the specifications involved, and results of tests required by Pratt & Whitney Aircraft are shown herein.

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

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

4. (Applicable to repaired or reworked raw material, parts or assemblies.) The raw materials, parts or assemblies have been reworked or repaired in accordance with Pratt & Whitney Aircraft 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 at any reasonable time.

| PART OR ASS'Y NO. (Size if no Part No.) | CHG. LTR. | SUF. NO. | SPECIFICATIONS, AS ORDERED | |
|---|---|---|---|---|
| PMC 4356AE | | | PWA 300 Rev. BR | |
| QUANTITY | DATE SHIPPED | LOCATION OF PWA PLANT TO SHIPPED TO | PACK SLIP NO. | P.O. NO. |
| | | | | |

| HEAT, LOT, CODE OR BATCH NO. | RAW MATERIAL VENDOR | TYPE-COMPOUND OR CASTING | PWA HEAT CODES (if required) |
|---|---|---|---|
| Batch No. 21C044 | | Zyglo Developer ZP-4B | |

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

RESULTS OF TESTS (Use reverse side if necessary)

| PHYSICAL PROPERTIES | ACCEPTED VALUES | PMC LIMITS (MINIMUM) | PMC LIMITS (MAXIMUM) |
|---|---|---|---|
| Flash Point | NA | 200º F | -- |
| Appearance | PASS | -- | White Fluffy Powder |
| Water Content | NA | -- | -- |
| Fluorescent Brightness | NA | 90% | 110% |
| Purity | PASS | No Yellow, Red, Green Flu | |

| CHEMCAL PROPERTIES | ACCEPTED VALUES | PMC LIMITS (MINIMUM) | PMC LIMITS (MAXIMUM) |
|---|---|---|---|
| Fluoride Content | <10 | -- | <= 50 ppm |
| Chloride Content | 84 | -- | <= 1000 ppm |
| Sulfur Content | 0.0123 | -- | <= 0.1000% |
| Sodium Content | 0.0188 | -- | <=0.1000% |

Magnaflux certifies that_Zyglo Developer ZP-4B_____ meets the requirements of PMC 4356AE -

| VENDOR NAME | BY (Authorizing Agent) |
|---|---|
| MAGNAFLUX | Matt Plamoottil, Quality Assurance Manage |
| VENDOR ADDRESS | |
| 218 Industrial Street, DeWitt, Iowa 52742 | Laurie Marx, Quality Control Manager |

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