

**Inspection Certificate (In accordance with EN 10204 Type-3.1)**

**Product: ZChek 9E Black**

**Non-Fluorescent MPI Suspension**

**Batch No.: 231220**

**Mfg. Date: 12/23**

**We certify that the above product, when tested at the time of manufacturing meets the following requirements**

- *ASME Boiler and Pressure Vessel Code 2010,2013,2017, 2019, 2021 Edition Section V, Nondestructive Examination including, Article 7, including 2005, 2006, 2008, 2009b and 2011a Addenda, paragraph T-731, paragraph T-765 and Article -25 as applicable.*
- *ASTM E709-21 paragraph 2.2*
- *AMS 3041F, AMS 3043E, AMS 2641D*

Parameter	Test Method	Quality requirement	Batch Result
Contamination	AMS 3041F-3.3.1	No foreign material, scum, or agglomeration	Confirms
Concentration	AMS 3041F-3.3.2	1.0-2.4 ml per 100ml	1.9ml per 100ml
Sensitivity	AMS 3041F-3.3.3	6 Hole indication shown	6 Hole indication
Color	AMS 3041F-3.3.4	Black	Black
Particle size	AMS 3041F-3.5	< 2 % residue on 45μ mesh	1.6 % residue on 45μ mesh
Mechanical durability	AMS 3041F -3.6	Retain initial sensitivity and color	Confirms
Spray ability and leakage	AMS 3043E-3.4	No perceptible leakage. Uniform spray pattern and No chunking and clogging of the nozzle	Confirms
Viscosity	AMS 2641D-3.2.2	< 3cSt @ 38 deg. C	2.65cSt @ 38deg.C
Flash point	AMS 2641D-3.2.1.1 Type-1	> 93deg.C	103deg.C



Odor	AMS 2641D- 3.2.6	No offensive, No objectionable odor	Confirms
Color	AMS 2641D-3.2.7	Not darker than No.1 ASTM color	Confirms

- **ASTM E3024-22**
- **ASTM E709-21, Paragraphs 8.1.2,8.2,8.3,8.5 &8.5.4**
- **EN ISO 9934-2-2015**

Parameter	EN ISO 9934-2	Quality requirement	Batch Result
Performance	7.1	Indication on Reference block-1 Reference block-2	Pass Length-6cm
Color	7.2	Black liquid	Color identical
Particle size	7.3	$d > 1.5\mu\text{m}$ - $d < 40\mu\text{m}$	$d_l(10\%) = 0.635\mu\text{m}$ $d_a(50\%) = 1.766\mu\text{m}$ $d_u(90\%) = 4.26\mu\text{m}$
Flash point	7.7	Report as found	103deg.C
Viscosity	7.9	Less than 5.0mPa @ 20deg.c	4.0 mPa @ 20 deg.C
Mechanical stability test Short term test	7.10	No degradation in sensitivity	Pass
Foaming	7.11	No significant foaming	Pass
Storage stability	7.13		3 years
Content of sulphur	7.15	< 200 ppm	39ppm
Content of halogens (chlorine & fluorine)	7.15	< 200 ppm	64ppm

**Notes**

1. Bulk material has a minimum shelf life of 5 years and Aerosol has minimum shelf life of 3 years.
2. EN ISO 9934-2 (7.15) specification require test results stated in ppm, but some require in percentage. To convert ppm to percentage, divide the ppm value by 10,000.

**Signature**  
**Manager Operations**

