

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

**Product: ZChek DL-Developer**

**Non Aqueous Developer For Visible Liquid Penetrant Inspection**

**Batch No.: 220907**

**Mfg. Date: 09/22**

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 2005, 2006, 2008, 2009b and 2011a Addenda Article-6 paragraph T-640 and Article 24 as applicable.*
- *ASTM E165/E165M-18, Paragraph 7.1*
- *ASTM E1417-21*

Parameter	ASME Boiler & PV Code	Quality requirement	Batch Result
Sulfur	Sec.V	< 0.1%	0.0024 wt % of residue
Chlorine + Fluorine	Sec. V	< 0.1%	0.0033 wt % of residue

- *ISO 3658-2013*
- *NUCLEAR POWER CORPORATION OF INDIA for materials for Dye Penetrant Inspection process.*

Parameter	NPCL	Quality requirement	Batch Result
Sensitivity	5.2.1 (i)	Equal to standard	Pass
Sulfur content	5.2.1(ii)	Max 25ppm	Pass (ref note-2)
Halogen content	5.2.1 (ii)	Max 25 ppm	Pass (ref note-2)
Corrosive Properties SS CS Copper Brass Aluminum	5.2.1 (iii)	No indication of pitting	SS- No indication of pitting CS- No indication of pitting Copper- No indication of pitting Brass- No indication of pitting Aluminum- No indication of pitting



• **EN ISO 3452-2-2021**

Parameter	EN ISO 3452-2	Quality Requirement	Batch result
Appearance	6.1	Equal to standard	Pass
Sensitivity Test	6.2	Equal to standard	Pass
Corrosive properties	6.11	No evidence of staining, pitting or any other corrosion on Magnesium Alloy	Pass
Sulfur Content	6.12	< 200 ppm	24 ppm
Halogen Content	6.12	< 200 ppm	33 ppm
Solid Content	6.13	13.5-16.5 gm	14.91 gm
Developer Performance	6.15	Equal to standard	Pass
Re-dispersibility	6.16	Readily dispersed	Pass
Density of carrier fluid	6.17	0.76-0.84 g/cc @29.5 deg.C	0.84g/cc

• **Internal quality Check**

Parameter	Internal Check	Quality Requirement	Batch Result
Spray pattern	QC/TP/003	Equal to standard	Pass
Settling rate	QC/TP/030	<2ml	1.1 ml

Notes

1. Bulk material has a minimum shelf life of 5 years and Aerosol has minimum shelf life of 3 years.
2. The NPCL Sulfur and halogen content is evaluated on basis of turbidity against the standard solution.
3. Most specifications require test results stated in percent, but some require parts per million (ppm). To convert percent to ppm, move the decimal four places to the right
4. ASME Sec V, procedure states that to evaporate off volatile solvents before analysis for Sulfur and Halogens. According to these specifications, only those residues higher than 0.005 g/100ml shall be analyzed for Sulfur and Halogens. Lower residues shall be reported.

*Signature*

**Manager Operations**

*Chaitra.M.N*

