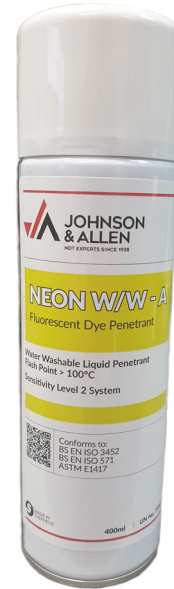


NEON W/W-A PENETRANT

Version 12012021

Water Washable Fluorescent Penetrant

Neon W/W-A Penetrant is a water washable liquid penetrant – A fluorescent dye for ideal for undertaking NDT on rough surfaces and formulated to have excellent ‘penetrating’ properties and high washability. When viewed under suitable UV-A light Neon W/W-A Penetrant gives high contrast indication and is capable of locating surface open flaws and discontinuities such as cracks and porosity and can also be used on non-porous ceramics and similar materials.



Key Features

Penetrant Type	Type 1 - Fluorescent
Testing Method(s)	A and C
Sensitivity	Level 2 - Medium
Carrier Fluid	Hydrocarbon Mixture

1 Benefits

1.1 Fast inspection processing

- Simple and reliable process is a convenient and easy-to-use solution for preventative maintenance and control checks.
- Quickly and completely covers the entire test surface due to high surface wetting.
- Spray-friendly and will not clog nozzles in automated lines, for less maintenance downtime.

1.2 Increase indication detection

- Greater indication contrast because of reduced background fluorescence, even on rough cast surfaces.
- Indications stand out more as the the product is formulated to have high washability making the removal of excess penetrant easy.

1.3 Wide application versatility

- Inspect a wide range of components without fear of corrosion or specification non-conformance.
- Meets or exceeds all requirements of ISO 3452 and ASTM E1417 - Ideal for professional industrial applications.

1.4 Maximum indication detection

- Produces strong, vibrant indications thanks to the high fluorescence and has high clarity when used with Dry Powder Developer.
- Part of the NEOPEN product family of high quality penetrant testing consumables products from Johnson & Allen Ltd.

1.5 Maximize operator comfort

- Promotes better inspection quality by providing the operator with a more comfortable work environment.
- Reduces discomfort from strong odours.

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2 Method of use

2.1 Introduction

The information presented in this section is intended as a manufacturers guide and best practice recommendations for a typical inspection process. It is strongly recommended any NDT procedure be first approved for use by an organisations qualified level 3 NDT operator or by someone in a senior position (e.g. quality manager) prior to any work being undertaken. Neon W/W-A Penetrant is available in both 400mL aerosols and in 5L bulk containers and may be applied by aerosol, brushing, flow-on, immersion, spray or by swab.

2.2 Pre-Cleaning

Ensure inspection surface is free of grease, oil and dirt prior to penetrant application. This can be done using either JAC-2 or JAC-3 Cleaner. Apply cleaner to the part and wipe clean with cloth. Allow part to completely dry before applying penetrant.

2.3 Penetrant Application

The component temperature should be between 10 and 50°C. Apply a thin even film of Neon W/W-A Penetrant to cover test area. Allow penetrant 15–30 minutes penetration time before removing.

2.4 Washing

Remove excess surface penetrant using a water wash, best results can be achieved using an air-water gun spray. It is recommended water pressure of 0.8 to 1.7 bar (10 to 25 psi) and water temperature be between 15 and 35°C be used. The washing process should be performed under a UV-A light source with a peak wavelength of 365nm capable of achieving light intensity > 300 $\mu\text{W}/\text{cm}^2$ at component surface. A section of the component should be washed until no surface fluorescence is visible, then ceased to prevent over-washing which could remove indications. It may be necessary to manipulate the component to minimise the pooling of waste water. This process typically takes 30 to 120 seconds however this is highly dependent on the geometry, size and surface finished of the component. Rough surfaces in particular will be more difficult to wash so practical tests should be undertaken to determine the optimal procedure.

2.5 Drying

Dry in a thermostatically controlled air recirculating drying oven pre-heated to between 50 and 60 °C for between 10 to 15 minutes. The optimal drying time will depend on component shape and geometry so component specific tests should be undertaken. Use the minimum drying time required to achieve a thoroughly dry component. To assist in drying low pressure compressed air can be used to blow off excess water prior to the component going into the drying oven, maximum pressure 1.7 bar (25 psi).

2.6 Developer

Maximum detection clarity can be achieved using Dry Powder Developer, this is commonly applied using a dust storm cabinet. An extremely fine, semi-translucent film where it is possible to see the test surface through the developer film is optimal. Allow a minimum of 15 minutes developing time before inspection – Fine defects could require up to maximum of 30 minutes. Low pressure compressed air can be used to blow off excess Dry Powder Developer prior to inspection, maximum pressure 0.3 bar (5 psi). Electrostatic systems and manual powder puffers are alternative Dry Powder Developer application methods. While Dry Powder Developer is recommended for developing fluorescent penetrants, JAD Developer can also be used to develop Neon W/W-A but more care should be taken when spraying to achieve a thinner coating than would be if using red contrast penetrants.

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2.7 Inspection

Inspection must be performed under UV-A light in a darkened area. The UV-A irradiance should be greater than 1000 $\mu\text{W}/\text{cm}^2$ at component surface and the total amount of visible light (ambient background light) must be less than 20 lux. This is typically achieved using a UV inspection lamp with a peak wavelength of 365nm and confirmed by undertaking a daily performance check using a light meter.

2.8 Post Cleaning

After the final inspection the component surface can be cleaned using either JAC-2 or JAC-3 Cleaner.

2.9 Effects on material

Neon W/W-A Penetrant is unlikely to cause corrosion in common constructional metals (e.g. most steels). However Neon W/W-A Penetrant may stain or soften some plastics and rubbers. As such a compatibility test should be carried out if there is any doubt when inspecting these materials.

2.10 Storage

Store in a cool place, protect from freezing conditions. The shelf life for aerosols and bulk are 18 months and 36 months from date of manufacture respectively. The date of manufacture will be displayed on the container along with the batch serial number.

2.11 Safety and Environment

Before undertaking the process described it is important that this complete document, together with any relevant Safety Data Sheets (SDS), be read and understood. All local and national regulations on the transport, storage, use and waste treatment of chemicals in concentrated or diluted form and as working solutions must be obeyed.

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3 Product Data

General Information	
Appearance	Yellow, mobile liquid
Family Classification	NEOPEN
UV-A Light	> 1000 $\mu\text{W}/\text{cm}^2$ - Required component surface for inspection
Minimum Dwell Time	15 minutes
Maximum Dwell Time	30 minutes
Flash Point	> 100°C
Carrier Fluid	Hydrocarbon Mixture
Propellant (Aerosol)	Carbon Dioxide
Penetrant Type	Type 1 - Fluorescent
Testing Methods	A and C
Sensitivity	Level 2 - Medium
Temperature Range	5 to 50°C
Shelf Life (Aerosol)	18 months
Shelf Life (Bulk)	36 months
Halogen Classification	Designation 'Low'
Sulphur Classification	Designation 'Low'
Heavy Metal Classification	Designation 'Low'
Standard Compliance	
Penetrant Standards	ISO 3452 ISO 571 ASTM E1417 ASTM E165
Additional Standards	Contact Johnson & Allen Ltd for confirmation of compliance for additional standards not listed above

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