

# NEOASTRA DG

Version 22012021

## Fluorescent Magnetic Ink - Day Glow

Neoastra DG is a highly-sensitive Isoparaffin based ink which fluoresces under UV-A light for wet methods magnetic particle testing. Neoastra DG consists of magnetic particles suspended in a carrier fluid to allow mobility under the influence of magnetic fields with improved contrast for use in day light conditions. Neoastra DG uses the highest grade of magnetic particles which have been selected for their response to very low magnetic fields and for low coercivity.



### Key Features

<b>Ink Type</b>	Fluorescent
<b>Appearance</b>	Fluorescent particle suspension
<b>Solid Content</b>	0.05 - 0.15%
<b>Carrier Fluid</b>	Isoparaffin

## 1 Benefits

### 1.1 Maximize indication detection

- Find indications of all shapes and sizes.
- Suspended particles have high sensitivity to magnetic fields producing great accumulation of particles around defects due to flux leakage produced by them.
- Great particle mobility and surface wetting to maximise defect detection.

### 1.2 Maximum defect contrast

- Produces bright vibrant yellow/green indications when viewed under a UV-A light source with an intensity exceeding 1000  $\mu\text{W}/\text{cm}^2$  at the component surface.
- Part of the NEOCOL product family of high quality magnetic particle testing consumables products from Johnson & Allen Ltd..

### 1.3 Day glow formulation

- No white contrast paint required means faster inspection processing times with no paint removal stage after inspection required either.
- Improved contrast in environments with ambient background light up to 500 lux.
- Neoastra DG can be used in both light and darkened conditions.
- However to comply with BS EN 9934-2 mbient background light levels must be restricted to 20 lux.

### 1.4 Wide application versatility

- Inspect a wide range of components without fear of corrosion or specification non-conformance.
- Meets or exceeds all requirements of ISO 9934 and ASTM E1444 - Ideal for professional industrial applications.

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## 2 Method of use

### 2.1 Introduction

The information presented in this section is intended as a manufacturer's 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. Neoastra F Fluorescent Magnetic Ink is available in both 400mL aerosols and in 5L and 25L bulk containers.

### 2.2 Pre-Cleaning

Ensure inspection surface is free of grease, oil and dirt prior to ink application. This can be done in many ways including with NeoIndus 1ES, NeoIndus 2EB or NeoIndus 3WEB degreaser and paint removers. Allow part to completely dry before applying any white contrast paints. The component temperature should be between 5 and 50°C.

### 2.4 Ink Application

If using Neoastra F from aerosols shake well for a minimum of 1 minute before use and spray at a distance of 20 to 30cm. If using Neoastra DG bulk from a tank then ensure the ink is continuously agitated and check the solid content daily using a centrifuge flask as part of a daily performance check. Neoastra DG can be applied either during magnetization (continuous method) or after magnetization (residual method). If applied during magnetization ink application should be ceased before the magnetization is ended.

### 2.5 Inspection

Inspection should take place under UV-A light with a peak wavelength of 365nm with a minimum intensity of 1000  $\mu\text{W}/\text{cm}^2$  at the component surface. Anecdotally it can be demonstrated that Neoastra DG gives suitable contrast even in environments with ambient background light up to 500 lux without the need for contrast paint. However to comply with BS EN 9934-2 levels must be restricted to 20 lux. This should be confirmed by undertaking a daily performance check using a light meter. Any defects present and capable of being detected should become visible almost immediately after application of Neoastra DG is ceased. Indications will appear as yellow/green build-up caused by the fluorescing magnetic particles being attracted to flux leakage caused by a defect being present. Depending on the component size, component geometry and inspection techniques, multiple applications of ink and magnetic fields may be required to fully test the component. Typically at least two inspection techniques will be required to investigate defects in two perpendicular planes.

### 2.6 Post Cleaning

After the final inspection the component surface can be cleaned using either NeoIndus 1ES, NeoIndus 2EB or NeoIndus 3WEB and then dried.

### 2.7 Effects on material

Neoastra DG is unlikely to cause corrosion in common constructional metals (e.g. most steels).

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## 2.8 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.

## 2.9 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.

## 3 Product Data

General Information	
Appearance	Fluorescent particle suspension
Family Classification	NEOCOL
UV-A Light	> 1000 $\mu\text{W}/\text{cm}^2$ - Required component surface for inspection
Flash Point	> 100°C
Carrier Fluid	Isoparaffin
Propellant (Aerosol)	Carbon Dioxide
Ink Type	Fluorescent
Application Type	Wet
Testing Methods	Continuous and Residual
Solid Content	0.05 - 0.15%
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 9934 ASTM E1444 ASTM E709
Additional Standards	Contact Johnson & Allen Ltd for confirmation of compliance for additional standards not listed above

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