

# NEOCOL B

Version 22012021

## Black Magnetic Ink

Neocol B is a highly-sensitive Isoparaffin based black ink for non-fluorescent (visible) wet methods magnetic particle testing. Neocol B consists of magnetic particles suspended in a carrier fluid to allow mobility under the influence of magnetic fields. Neocol B uses the highest grade of magnetic particles which have been selected for their response to very low magnetic fields and for low coercivity. This makes Neocol B responsive whilst avoiding coagulation.



### Key Features

<b>Ink Type</b>	Non-Fluorescent (Visible)
<b>Appearance</b>	Black particle suspension
<b>Solid Content</b>	2.00 - 2.50%
<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 clear indications when used in conjunction with either Neopaint NPT16, Neopaint-2 or ECO-2 white contrast paints.
- Part of the NEOCOL product family of high quality magnetic particle testing consumables products from Johnson & Allen Ltd.

### 1.3 Convenient to use

- Easy to carry and use in the field with the convenient aerosol cans.
- Use in all conditions without the need for darkness or UV lights.

### 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.

### 1.5 Maximize operator comfort

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

## Johnson and Allen Ltd

Neocol Works, Smithfield, Sheffield, S3 7AR

Head Office: Tel: +44 (0) 114 273 8066 Email: info@johnsonandallen.co.uk

www.johnsonandallen.co.uk

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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. Neocol B Black 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.

### 2.3 Contrast Paint Application

For best results a white contrast paint from the NEOCOL product family should be applied, this includes Neopaint NPT16, Neopaint-2 or ECO-2 white contrast paint. The chosen white contrast paint should be applied evenly to each surface being inspected in thin uniform coating. If more than one layer is required to achieve a solid white background, then allow the first coating to completely dry first before applying a second. Ensure white contrast paints are completely dry before applying Neocol B Black Magnetic Inks or any magnetic fields.

### 2.4 Ink Application

If using Neocol B from aerosols shake well for a minimum of 1 minute before use and spray at a distance of 20 to 30cm. If using Neocol B 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. Neocol B 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 in diffused white light of at least 500 lux at the component surface. 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 Neocol B is ceased. Indications will appear as black build-up contrasted against the white background caused by the black 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 Paint Removal

After the final inspection the component surface can be cleaned using either NeoIndus 1ES, NeoIndus 2EB or NeoIndus 3WEB paint removers. A steel wire brush can also aid in the removal of white contrast paint from welds if permissible. This can be particularly beneficial with hard to wipe geometry like welds.

### 2.7 Effects on material

Neocol B 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	Black particle suspension
Family Classification	NEOCOL
White Light	> 500 lux - Required at component surface
Flash Point	> 100°C
Carrier Fluid	Isoparaffin
Propellant (Aerosol)	Carbon Dioxide
Ink Type	Non-Fluorescent (Visible)
Application Type	Wet
Testing Methods	Continuous and Residual
Solid Content	2.00 - 2.50%
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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