



# CGM CIGIEMME S.p.A.



Controlli Non Distruttivi - Non Destructive Testing

## Product Code

Spray: 03021810

Cans: 02021810

## Ref. no.

R2.72S

R2.72

Product Data  
Sheet

## ROTVEL AVIO B

### PRODUCT DESCRIPTION

Rotvel Avio B is a water-washable dye penetrant with excellent resolution in detecting surface discontinuities. It generates a high red colour contrast combined with excellent penetration characteristics. The penetrant is characterised by excellent washability, which minimises background stains and false indications; this saves time and water consumption. The penetrant is designed for Level 2 performance, in accordance with standards.

### COMPOSITION

Blend of organic dyes in non-ionic surfactants and super-refined petroleum distillates.

**N.B.:** Like all CGM materials, Rotvel Avio B is tightly controlled to ensure batch uniformity, optimal process verification and control reliability.

### SPECIFICATIONS

- Excellent penetration characteristics.
- Intense, contrasting colour.
- High resolution of discontinuities.
- Wide range of applications.
- Excellent washability over a wide range of temperatures and penetration times.
- Good resolution of discontinuities – water removal.
- Excellent discontinuity resolution – solvent removal.

### PACKAGING TYPE

- 400 ml spray cans
- 10 L cans
- 200 L metal drums

### APPLICABILITY

By spraying, dipping, brushing on ferrous and non-ferrous material.

Ideal for controlling:

- Melting.
- Forging.
- Welding.
- Pressure vessels.
- Tubular products.
- Metal carpentry in general.
- Leak tests.
- Details in power plants.
- Products in the manufacturing environment.

Ideal for the detection of:

- Cracks.
- Leaks.

**NOTE:** Inspection of plastic materials with this type of penetrant is not recommended, as the material under inspection may be stained, softened or even dissolve during the test.

On porous materials, preliminary tests are recommended.



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## INSTRUCTIONS FOR USE

- Ensure that the surface under inspection is clean, dry and free of oil, grease and other contaminants.
- Apply the penetrant by dipping, brushing or spraying. Completely cover the area to be inspected.
- Wait for the expected penetration time. The penetration time is primarily a function of the type of discontinuity to be detected and is specified by the relevant standard. Remember, however, that the minimum dwell time of the penetrant is about 5 minutes. A penetration time of 10 minutes is recommended, as this is adequate for most situations. However, it is suggested that reference be made to the company's standard or those ones to be applied.
- Remove excess penetrant from the surface using clean water in the temperature range of +10°C to +38°C for no longer than 2 min. and with a pressure not exceeding 280 kPa.
- Dry the workpiece by placing it in a controlled recirculating air dryer, at a temperature below +70°C, or with a classic hair dryer held at a distance of about 300 mm from the surface under inspection, for the minimum time necessary and never more than 30 min.
- Make sure the surface to be inspected is dry and apply our **Rotrivel U** developer or **Rotrivel H<sub>2</sub>O Paste**. Allow a minimum development time of 10 minutes before inspecting under adequate lighting conditions. Any indications will appear in a deep red colour against the white background created by the developer. It is recommended to use the developer, as it maximises sensitivity and provides a contrasting white background that allows easier detection of red indications. A solvent-based developer is recommended, as it dries quickly and effectively controls the spread of the penetrant and can be applied by spraying.
- At the end of the inspection, developer and penetrant residues can be removed by wiping the surface with a cloth, washing with water or using **Velnet/Solnet**.

## TECHNICAL DATA

		Reference Standard
Appearance	Red-coloured liquid	
Odour	Characteristic	
Density at 20°C	0.85 g/cm <sup>3</sup>	EN ISO 12185
Kinematic viscosity at 40°C	5,010 mm <sup>2</sup> /s	ASTM D445/EN ISO 3104
Flash point	> 100°C	ASTM D 93-A
Type	Type II – Method A	AMS 2644
Type and Sensitivity	Type II Method A, Level 2 (high)	EN ISO 3452-2
Water Tolerance	Above than 5%	EN ISO 3452-2

Typical values.



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## TIME, TEMPERATURE OF USE AND USER RECOMMENDATIONS

NDT method	Water-washable Dye Liquid Penetrant Inspection
Usage temperature	From 4°C to 52°C ASTM E 165/EN ISO 3452-1
Preliminary cleaning	Velnet/Solnet
Recommended penetration time*	5 to 10 min.
Recommended removal time (with water)**	30 sec. to 2 min.
Developer	Rotrivel U – Rotrivel H <sub>2</sub> O Paste
Final cleaning	Water – Velnet/Solnet – Detergent H <sub>2</sub> O
Coverage	20-30 m <sup>2</sup> for litre; 10-15 m <sup>2</sup> for spray
Shelf life	3 years at a temperature between 5°C and 45°C, in a dry place out of direct sunlight
Accessories EN ISO 3452	Type 1 reference blocks Type 2 reference blocks

\* The times indicated refer to working temperatures between 10 and 52°C, for temperatures between 5 and 10°C the times indicated must be doubled.

\*\* The times indicated vary depending on the water temperature (10-38°C), the type of finish of the part to be inspected and the size of the defects to be detected.

## COMPLIANCE WITH STANDARDS

- ASME Sect. V – Art. 6
- ASTM E165
- EN ISO 3452-2
- AMS 2644 (Complies with standard, but not included in QPL list)
- PMUC (certificate of conformity on request)

- transport and use in the field, it provides uniform coverage of the area under inspection.
- Thanks to its high wetting capacity, it is able to spread quickly over the entire surface under inspection.
- It generates bright red indications of strong intensity, especially when used with the solvent-based developer Rotrivel U.

## BENEFITS

- Reliable and easy to use.
- Also packaged in spray cans, which are easy to

## HEALTH AND SAFETY

Read all health and safety information before using this product. This information can be found in the Safety Data Sheet, available on request.

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