Non-aqueous liquid developers

1 General Description

Ardrox® 9D1B and NQ1 are liquid suspensions of an inert white powder in a quick drying solvent with low sulfur, halogen and alkali metal content.

Ardrox® 9D1B and NQ1 are used as developers in penetrant testing of forged parts, welds, cast and drop forged parts. Ardrox® NQ1 is designed to offer best results with both color contrast and fluorescent penetrants while the thin layer provided by Ardrox® 9D1B will make it especially suited for fluorescent penetrant testing applications.

Ardrox® 9D1B and NQ1 are available as bulk material and as aerosol. They are typically used together in a penetrant system with the Ardrox® penetrants and developers.

Conformances:

✓ ASME Boiler & Vessel Code	Section V, Article 6
✓ Electricité de France	PMUC (Ardrox® NQ1)
✓ EN ISO 3452-2	Form d & e
✓ Pratt & Whitney	FPM PMC 4357 (Ardrox® 9D1B)
✓ Rolls Royce	RRP 58003
✓ SAE	QPL-2644
✓ SAFRAN	IN-5000

Ask your Chemetall representative for a complete list of approvals

2 Physical and Chemical Properties

		Ardrox®	
Property	Unit	9D1B	NQ1
Appearance	-	White solid particle in a clear liquid	
Density	g/ml @ 20 °C / 68 °F	0.88	0.8
Flash point	°C / °F	-18 / 0	16 / 61

These are typical values only and do not constitute a specification.

3 Method of use

3.1 Pre-cleaning

Clean part with e.g. Ardrox® 9PR5, 9PR50 or 9PR88 before applying Ardrox® penetrant. Apply cleaner to the part and wipe clean with cloth. Surface has to be free of grease, oil and dirt. Allow part to dry before applying penetrant.

3.2 Penetrant

Apply a thin even film of penetrant to cover test area. Allow penetrant 10 – 30 minutes penetration time before removing.

3.3 Penetrant removal

Remove excess surface penetrant with clean cloths, pre-moistened with cleaner (e.g. Ardrox® 9PR5, 9PR50 or 9PR88). Alternatively, removal can be effected by gentle water spray or by rinsing with water (for application over 5°C / 41°F). Do not flush surface with cleaner as sensitivity will be impaired. Repeat procedure until surface penetrant has been removed.

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Thoroughly dry the component surface before developer application.

3.4 Developer

Ardrox® 9D1B and NQ1 are solid suspensions of solid particles which settle-out on standing; and therefore aerosols and bulk containers must be shaken thoroughly before and during use.

Spray thin, even developer film over area to be inspected (spraying distance 30 cm / 1 ft.).
Ardrox® 9D1B and NQ1 must be applied by a light even spray as any other method such as immersion or brushing will cause a loss of process sensitivity. When Ardrox® 9D1B is used as part of a Ardrox® fluorescent penetrant process, it should be applied by successive spraying until a translucent layer is achieved and it is possible to see the test surface through the developer film.

Surface temperature should be between -10 and 50°C (15-120°F).
Allow 10 – 30 minutes developing time before evaluation.

For Ardrox® color contrast processes, inspection should be carried out in diffused white light of at least 500 lux (approx. 46 ft.cdl) and in the case of Ardrox® fluorescent penetrant processes under UVA of 365 nm peak wavelength, typical output of 1200 µwatts/cm² at 38 cm from the component.

Attention:
The procedure above is a recommendation only; where relevant, the process specifications of the approving authorities must be followed.

4 Effects on materials

When Ardrox® 9D1B or NQ1 is used in the prescribed manner, no significant corrosion is likely to occur on commonly used constructional metals. Ardrox® 9D1B and NQ1 may cause swelling of some rubbers and plastics, the product should be tested for compatibility before application.

5 Storage

Store in a cool place, with protection from freezing conditions.

6 Safety guidance & waste release

Before operating the process described it is important that this complete document, together with any relevant Safety Data sheets, be read and understood.
All waste waters must be treated in accordance with national legislation and local regulations prior to discharge to the sewer.

7 General information

Chemetall supplies a wide range of chemical products and associated equipment for cleaning, descaling, paint and carbon removal, metal working and protection and non-destructive testing. Sales Executives are available to advice on specific problems and applications.

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Head Office
Chemetall GmbH
Trakehner Straße 3
60487 Frankfurt am Main
Germany

T +49 69 7165 0
F +49 69 7165 3018
surfacetreatment@chemetall.com
www.chemetall.com

® registered trademark.

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