Technical Data Sheet

ARDROX® 9702 - 9705

Water-washable Fluorescent Penetrants

1 General Description

Ardrox® 9702 – 9705 are water washable fluorescent penetrants. These products give crisp indications with exceptionally low levels of background and have excellent heat and UV fade characteristics. They are ideal for electrostatic application.
Ardrox® 9702 – 9705 can be used for metals and ceramics which are not strongly porous, during production and maintenance works. They are appropriate for various applications such as aerospace, automotive and nuclear industry thanks to a large number of approvals and conformances.

Conformances

✓ SAE	AMS 2644
✓ ASME	Boiler & Vessel Code
✓ CFM International	CFM56 SPM (Ardrox 9703 & 9704)
✓ GE Commercial Engines	GE Commercial Engines SPM (Ardrox 9703 & 9704)
✓ Pratt & Whitney	PMC 4350-6 (Ardrox 9703) & PMC 4351-6 (Ardrox 9704)
✓ Rolls Royce	OMat 653L (Ardrox 9703 & 9704) & 632R (Ardrox 9705)
✓ SAFRAN	IN-5000 (except Ardrox 9702)

Ask your Chemetall representative for a complete list of approvals

2 Physical and Chemical Properties

Property	Ardrox® 9702	Ardrox® 9703	Ardrox® 9704	Ardrox® 9705
Appearance	Clear, yellowish – greenish liquids			
Density in g/ml at 20 °C or 68 °F	Approx. 0.88	Approx. 0.89	Approx. 0.87	Approx. 0.88
Flash point	More than 100 °C / 212 °F			
Sensitivity level	1	2	2	3

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

3 Method of use

Ardrox® 9702 – 9705 may be applied by brushing, tank immersion or by electrostatic spraying. The following typical process sequence illustrates the recommended method of use for general industrial applications. However, where relevant, the process specifications of the approving authorities must be followed.

3.1 Pre-Cleaning

All surface contamination such as rust, paint residues, grease, scale etc. must be completely removed. Ensure that the component is completely dry and not too hot or cold (between 10 °C and 50 °C or 50 °F and 122 °F).

3.2 Penetrant Application

Apply penetrant to the surface and leave for a suitable dwell period. Allow components to drain as necessary. The combined application and drainage period should be at least 10 minutes. If the drain time exceeds 1 hour, the penetrant should be re-applied to the surface.

3.3 Cleaning

Penetrant removal by water washing: 15 – 35 °C (59 °F – 95 °F) for 1 up to 3 minutes at 1.4 - 1.7 bar (20 - 25 psi).

(in the case of rough surfaces or if products for higher sensitivity levels – e.g. Ardrox® 9705 - are used, it may be necessary to clean with warm water at this point. Relevant trials should be carried out prior to application)
Use one or a combination of the following methods:
a) air agitated water rinse tank
b) spray rinse tank
c) manual spray rinse
The times given are a rough guide only. Practical trials should be carried out to find the optimum.

3.4 Drying

Dry in air recirculating oven at 50 – 60 °C (122 °F – 140 °F), for 10 minutes max. Longer times may be required for larger components. To assist drying, either clean, filtered, low pressure, compressed air (1.7 bar/25 psi maximum) or a hot water dip (80 – 90 °C / 176 °F – 194 °F maximum for up to 20 seconds) can be used prior to oven drying. Use the minimum oven time required to obtain thoroughly dry components.

3.5 Development

Apply developer Ardrox® 9D4A, Ardrox® 9D1B or Ardrox® NQ1.
Contact time: Ardrox® 9D4A: 10 - 30 min. // Ardrox® 9D1B / NQ1: maximum 5 – 10 min.

1.1 Inspection

Low pressure, clean filtered air at 0.3 bar/5 psi (maximum) should be used to remove excess powder prior to inspection under black (UV) light, (1000 µW/cm² minimum) in a darkened area.

4 Effects on materials

When Ardrox® 9702 – 9705 are used in the prescribed manner, no significant corrosion is likely to occur on commonly used constructional metals.
These products may stain or soften some plastics and rubbers and, where appropriate, a compatibility test should be carried out.

5 Storage

Store Ardrox® 9702 - 9705 at temperatures between +10 °C and +40°C (50 °F - 104 °F), in a dry place, away from oxidizing chemicals and from sources of heat. Avoid direct exposure to sunlight.

6 Safety guidance

Before operating the process described it is important that this complete document, together with any relevant Safety Data sheets, be read and understood.

7 Waste release

All waste waters must be treated in accordance with national legislation and local regulations prior to discharge to the sewer.