ARDROX® 9702, 9703, 9704 and 9715

WATER-WASHABLE FLUORESCENT PENETRANTS

1 Description

Ardrox® 9702, 9703, 9704 and 9715 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, 9703, 9704 and 9715 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 other high specification industries thanks to a large number of approvals and conformances.

Ardrox® 9702, 9703, 9704 and 9715 are usually used in conjunction with the Ardrox® 9D4A or 9D1B developer and the Ardrox surface technologies. They are also approved to the AMS 2644 as Method C, solvent removable penetrants.

Ardrox® 9702, 9703, 9704 and 9715 are available as bulk material; Ardrox® 9704 is also available as aerosol spray can.

Conformances

✓ SAE	AMS 2644
✓ CFM International	CFM56 SPM (Ardrox 9703 & 9704)
✓ GE Commercial Engines	GE Commercial Engines SPM (Ardrox 9703 & 9704)
✓ Pratt & Whitney	PMC 4350-14 (Ardrox 9704)
✓ Rolls Royce	OMat 653L (Ardrox 9703 & 9704)
✓ 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® 9715
Appearance	Clear, yellowish – greenish liquids			
Density in g/ml at 20°C / 68°F	Approx. 0.87	Approx. 0.89	Approx. 0.87	Approx. 0.93
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, 9703, 9704 and 9715 may be applied by brushing, tank immersion or by electrostatic or conventional 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 (10-50°C / 50-122°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 (59–95°F) for 30 seconds up to 2 minutes at 0.8-1.7 bar (10-25 psi). In the case of rough surfaces or if products for higher sensitivity levels – e.g. Ardrox® 9715 - 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 (122–140°F), typically for 10 minutes. Longer times may be required for larger components. To assist drying, either clean, filtered, low pressure, compressed air (1.7 bar/25 psi maximum) 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 or Ardrox® 9D1B and allow 10 – 30 minutes developing time before evaluation.

3.6 Inspection

When applicable, 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 material

When Ardrox® 9702, 9703, 9704 and 9715 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 Shelf life, storage, and disposal

Please refer to the corresponding Material Safety Data Sheets for details on shelf life, storage, and disposal.

6 Labor and environmental protection

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

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 advise on specific problems and applications.

The above details have been compiled to the best of our knowledge on the basis of tests and research work and with regard to the current state of our practical experience. This technical product information is non-binding. No liabilities or guarantees deriving from or in connection with this leaflet can be imputed to us. Statements relating to possible uses of the product do not constitute a guarantee that such uses are appropriate in a particular user's case or that such uses do not infringe the patents or proprietary rights of any third party. The reproduction of any or all of the information contained in this leaflet is expressly forbidden without Chemetall's prior written consent.

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