Fluorescent penetrants

Description and uses

ARDROX 970P22, ARDROX 970P23, ARDROX 970P24 and ARDROX 970P25 are water washable fluorescent penetrants suitable for the detection of defects open to the surface in metal and non-porous ceramic components during manufacture and overhaul. 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. They may be classified as follows;

ARDROX 970P22	: Low	sensitivity.
ARDROX 970P23 and ARDROX 970P24	: Medium	sensitivity.
ARDROX 970P25	: High	sensitivity.

Approvals

ARDROX 970P22, ARDROX 970P23, ARDROX 970P24 and ARDROX 970P25 are approved to AMS 2644 to the following levels:

ARDROX 970P22	: Level 1
ARDROX 970P23 and ARDROX 970P24	: Level 2
ARDROX 970P25	: Level 3

Chemicals required

ARDROX 970P22,23,24 or 25 [fluorescent penetrant]

ARDROX 9D4A [powder developer]

Method of use

ARDROX 970-P22, ARDROX 970-P23, ARDROX 970-P24 and ARDROX 970-P25 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 closely followed.

1.	PRECLEAN AND DRY	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 5°C and 40°C).
2.	PENETRANT APPLICATION ARDROX 970P22, ARDROX 970P23, ARDROX 970P24 or ARDROX 970P25. Contact 10 minutes → 1 hour.	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.	PENETRANT REMOVAL BY WATER WASHING 15 - 35°C. 1 → 3 minutes. 1.4 - 1.7 bar (20 - 25 psi).	Remove excess penetrant by one or a combination of the following methods: a) air agitated water rinse tank, b) spray rinse tank, c) manual spray rinse . N.B. The times given are a rough guide only. Practical trials should be carried out to find the optimum.
4.	OVEN DRY Air recirculating oven at 85°C maximum. Typically for 10 minutes. Longer times may be required for larger components.	To assist drying, either the use of clean, filtered, low pressure, compressed air (1.7 bar/25 psi maximum) or a hot water dip (80 - 90°C maximum for up to 20 seconds) can be used prior to oven drying. Use the minimum oven time required to obtain thoroughly dry components.
5.	APPLY DEVELOPER, ARDROX 9D4A. Contact time 10 minutes minimum.	ARDROX 9D4A may be applied in purpose built dust storm cabinets, or by an electrostatic spray unit or spray applicator in an extracted booth.
6.	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, (800 μW/cm² minimum) in a darkened area.

Effects on Materials

When ARDROX 970P22, ARDROX 970P23, ARDROX 970P24 and ARDROX 970P25 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.

Technical Information

Appearance:	Clear, bright, highly fluorescent, yellow liquids.
Flash Point:	Greater than 100°C.
Density at 20°C:	ARDROX 970P22 and ARDROX 970P23 = 0.88 g/ml
	ARDROX 970P24 and ARDROX 970P25 = 0.89 g/ml

These are typical values and do not constitute a specification.

Equipment materials

Equipment/tanks should be constructed of 316 or 304 stainless steel or mild steel if free from rust, scale and other contaminants.

General information

Chemetall supplies a wide range of chemical products and associated equipment for cleaning, sanitising, descaling, paint and carbon removal, metal protection and forming, paint denaturing and non-destructive testing. Field Support Engineers are available to advise on specific problems and applications.

Chemetall also supplies products within the glass, polymer, fine chemical and aerospace fields.

Safety and handling guidance

Before using the product it is important that this complete document, together with any relevant safety data sheet(s), have been read and understood. The safety data sheet(s) will advise on all precautions, safety equipment and procedures necessary in the safe use and disposal of the product.

Environmental guidance

All local and national regulations on the transport, storage, use and waste treatment of chemicals in concentrated or diluted form, or as working solutions, plus any bi-products and contamination occuring as part of the process, must be obeyed.

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

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