

Ardrox® P133D

Water Washable Fluorescent Penetrant

Type I (fluorescent), Method A (water washable) and Method C (solvent removable) AMS 2644 approved inspection penetrant.

PRIMARY APPLICATION

Ardrox® P133D has been approved for sensitivity Level 2.

Ardrox® P133D is a solvent based formulation intended for inspection of metal components during manufacture and overhaul. It provides:

- Low cost
- Bright, crisp indications
- Low residual background
- Temperature stability
- Heat and UV fade resistance
- Over-wash resistance
- Low toxicity
- Flash point >200°F (93°C)
- Suitable for electrostatic application

CHEMICAL CHARACTERISTICS

flash point	>200°F (93°C) minimum, ASTM D113, (PMCC)
appearance.....	greenish-yellow
sulfur content.....	100 ppm
chloride content.....	200 ppm
fluorides content.....	20 ppm
sodium content.....	60 ppm
density	0.857 to 0.885 g/ml
viscosity	6.12 to 7.48 centistokes, per ASTM D445

APPROVALS

In addition to being approved to AMS 2644, **Ardrox® P133D** is approved by all major aerospace engine and airframe manufacturers including General Electric, Rolls Royce, McDonnell Douglas, Boeing and Pratt & Whitney. For the nuclear industry, this product is designed to conform to the requirements of the ASME Boiler and Pressure Vessel Code (Section V, Article 6) and AECL. Chemetall Oakite manufacturing facilities are QS-9000, ISO 9001 certified.

APPLICATION PROCEDURE

Ardrox® P133D may be applied by brushing, tank immersion, conventional and electrostatic spraying. The following typical process sequence illustrates the recommended method of use.

1. PRECLEAN/DRY

All surface contamination (rust, paint residues, greases, scale, etc.) must be completely removed. After cleaning, make sure that the component is completely dry and cool, 125°F (53°C) or lower, before applying the penetrant.

2. PENETRANT APPLICATION

Apply penetrant to the surface and leave on for a suitable dwell period. This dwell period is normally 5 minutes minimum. If the contact period exceeds 120 minutes, the penetrant should be reapplied to the surface.

3. WATER WASH - 25 to 40 psi, 1 to 3 minutes, 50° to 100°F (10° to 38°C)

Use either one or a combination of manual spray or automatic spray tank rinses.

The times given are a guide only. Practical trials should be carried out to establish the most suitable conditions for specific components.

4. OVEN DRY, AIR RECIRCULATING - Oven set at 160°F (71°C) Maximum

Use the minimum time necessary to thoroughly dry the components. Use clean, filtered, low-pressure compressed air to remove pockets of water before oven drying.

5. APPLY DEVELOPER

Dry powder developer, **Ardrox® 9D4A**, may be applied in specially designed dust storm cabinets or by electrostatic spray; dwell time: 2 to 5 minutes. Non-aqueous developers, **Ardrox® 9D1B** or **NQ-1** are applied by spray; dwell time: dry, plus 2 minutes. The aqueous developer **Ardrox® 9D76** is applied prior to Step 4, oven dry. In most cases developers are required by government or prime contractor specifications.

6. INSPECTION

Component should be inspected under UVA (365-nm) illumination in a darkened area.

EFFECTS ON MATERIALS

Ardrox® P133D is non-corrosive to most common metals. It meets the corrosion requirements of AMS 2644. It may stain or soften some plastics and rubbers; where appropriate, a compatibility test is recommended.

NOTES ON USE

It is recommended that tanks, in the process line, be constructed from stainless steel (Grade 304 or equivalent). For areas, which are exposed to water, mild steel may be used provided it is free from rust, scale and other contaminants.

SAFETY AND HANDLING

Prior to handling and use of any of the materials referenced in this document, the Material Safety Data Sheets should be read and understood by all personnel in contact with these materials.

KEEP OUT OF REACH OF CHILDREN

STORAGE

Dry, indoor storage at temperatures between 40°F and 100°F is recommended, away from any incompatible materials referenced in Material Safety Data Sheets. All containers should be kept tightly closed when not in use.

SHELF LIFE

The shelf life of **Ardrox® P133D** is 3 years (2 years for aerosols).

DISPOSAL

Any disposal of the materials referenced in this document should be in accordance with all applicable federal, state, and local regulations.

Process solutions can contain components other than those present in the materials, as supplied.

Analysis of process solutions may be required prior to disposal.

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