

# Ardrox® P136E

## Water Washable Fluorescent Penetrant

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

### PRIMARY APPLICATION

Ardrox® P136E has been approved for sensitivity Level 4.

This penetrant is characterized by its controlled washability, which makes it less susceptible to over-washing. This high entrapment feature truly makes it unique in comparison to other water washable products. Flaw finding is enhanced by its excellent bleed back properties. This product was developed for fracture critical control inspection.

Ardrox® P136E has a flash point of well over 300°F (149°C). Very low in odor, it contains no petroleum solvents, no heavy metals, and no fats, oils or greases as constituents. There is no loss of sensitivity due to evaporation nor will this product break down under high temperature conditions. It provides:

- Bright, crisp indications
- Low residual background
- Exceptionally high and UV fade resistance
- Over-wash resistance
- Low toxicity

\*Note: Propellant used in aerosol contains VOC

### CHEMICAL CHARACTERISTICS

flash point.....	350°F (177°C), PMCC
appearance .....	greenish-yellow
sulfur content.....	100 ppm
chloride content.....	100 ppm
fluorides content.....	25 ppm
sodium content.....	60 ppm
density .....	7.97 to 8.14 lb/gal
viscosity.....	21.87 to 26.73 centistokes, per ASTM D445

### APPROVALS

In addition to being approved to AMS 2644, **Ardrox® P136E** is approved by all major aerospace engine and airframe manufacturers including General Electric, Rolls Royce, McDonnell Douglas, Boeing, Pratt & Whitney and Rockwell (fracture control inspection for B-1 aircraft applications.) 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® P136E** may be applied by aerosol, 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 NQ1**, 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® P136E** is non-corrosive to most common metals. It meets the corrosion requirements of AMS 2644 for aluminum, steel and magnesium. It is compatible with titanium and nickel alloys. 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® P136E** 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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