

# ARDROX<sup>®</sup> 9812, 9813 & 9814

## FLUORESCENT POST-EMULSIFIABLE PENETRANTS

### 1 Description

Ardrox<sup>®</sup> 9812, 9813 and 9814 are fluorescent penetrants, to be used with a separate emulsifier. These products give crisp indications with exceptionally low levels of background fluorescence and have excellent heat and UV fade characteristics. They are ideal for electrostatic application.

They are normally used in conjunction with Ardrox<sup>®</sup> 9881 hydrophilic emulsifier (maximum concentration 10% v/v) and with the Ardrox<sup>®</sup> 9D4A or 9D1B developer and the Ardrox surface technologies.

Ardrox<sup>®</sup> 9812, 9813 and 9814 are also approved to the AMS 2644 as Method C, solvent removable penetrants.

They are available as bulk material or as aerosol spray cans on special order.

#### Conformances

✓ SAE	AMS 2644
✓ Pratt & Whitney	PMC 4352, 4353 & 4354
✓ Rolls Royce	CSS 232 & OMat
✓ SAFRAN	IN-5000
✓ GE Commercial Engines	GE Commercial Engines SPM
Ask your Chemetall representative for a complete list of approvals	

### 2 Physical and chemical properties

Property	Ardrox <sup>®</sup> 9812	Ardrox <sup>®</sup> 9813	Ardrox <sup>®</sup> 9814
Appearance	Clear, bright, highly fluorescent, yellow liquids		
Density in g/ml at 20°C / 68°F	Approx. 0.90		
Flash point	100°C / 212°F (Pensky Martens closed cup)		
Sensitivity level	2	3	4

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

### 3 Method of use

Ardrox<sup>®</sup> 9812, 9813 and 9814 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 (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 Remove excess penetrant

Penetrant removal by water washing: 15–35°C (59–95°F) for approx. 1 min. at 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 rinsing
- a) manual spray rinse
- d) wipe with a clean lint-free tissue, dampened in Ardrex<sup>®</sup> solvent remover

The times given are a rough guide only. Practical trials should be carried out to find the optimum.

### 3.4 Emulsify

Immerse in Ardrex<sup>®</sup> 9881 at maximum 10% v/v in water at ambient temperature for 30–90 seconds. Slight agitation of components is recommended to free any trapped air. Drain for 30 seconds over the remover tank.

### 3.5 Rinse with water

Conditions as for 3.3. It is recommended that this rinse stage be kept separate from the pre-rinse to facilitate effluent treatment.

### 3.6 Drying

Dry in air recirculating oven at 50–60°C (122–140°F), for 15 minutes maximum. 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 / 176–194 °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.

### 3.7 Development

Apply developer Ardrex<sup>®</sup> 9D4A or Ardrex<sup>®</sup> 9D1B and allow 10 – 30 minutes developing time before evaluation.

### 3.8 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/cm<sup>2</sup> minimum) in a darkened area.

## 4 Effects on material

When Ardrex<sup>®</sup> 9812, 9813 and 9814 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<sup>®</sup> 9812, 9813 and 9814 at temperatures between +10 °C and +40°C (50-104 °F), in a dry place, away from oxidizing chemicals and from sources of heat. Avoid direct exposure to sunlight. Shelf-life of Ardrox<sup>®</sup> 9812, 9813 and 9814 is 36 months.

## 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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