



ARDROX
NDT PRODUCTS
&
EQUIPMENT

Service Through Solutions

Proudly manufactured in Australia
By

Chemetall (Australasia) Pty Ltd

Chemetall (Australasia) Pty Limited is an Australian based company producing a wide range of speciality chemical products in their manufacturing plants in Sydney & Melbourne.

The company has been in existence for 50 years, originally manufacturing and marketing the Ardrox range of products for descaling, paint stripping, corrosion protection, cleaning and non destructive testing.

Chemetall (Australasia) Pty Ltd's main activities are in Surface Treatment and Aerospace. We are involved in products and processes for the chemical surface treatment of metals to achieve improved quality, paint adhesion and corrosion resistance and for improvement of cold forming and wear resistance. Non-destructive testing (NDT) is a major area of interest and we are also active in products for transport, sanitation and general industrial applications.

The Ardrox trade name is synonymous with the aerospace industry, offering reliable solutions for the most demanding application for aircraft maintenance and overhaul.

Other brands currently owned and manufactured by Chemetall includes Oakite, Ardrox AV (formerly Dinitrol) & Naftoseal

INDUSTRY

PRODUCTS



Chemetall (Australasia) Pty Limited offers a wealth of experience and technical expertise in the application of this comprehensive product range to the diverse problems encountered in today's industry.

This brochure contains a brief overview of the NDT products and equipment available from Chemetall for magnetic particle and dye penetrant inspection processes. Technical data sheets and material safety data sheets, where applicable, are available for each product on request.

PENETRANT INSPECTION

Chemetall (Australasia) Pty Limited is listed as an approved manufacturer of Ardrex Penetrant Inspection Materials in QPL-AMS-2644.

The systems are approved by USAF, Ministry of Defence (UK) and conform to ASME Boiler and Pressure Vessel Code. They are also approved and qualified by national defence specifying authorities, aircraft engine and airframe manufacturers.

All the products listed in this section are Qualified to AMS 2644 where shown and are, therefore, acceptable for use when working to ASTM E 1417 and AS 2062.

Penetrant inspection is used to reveal defects which are open to the surface in metals, ceramics and certain plastic materials.

SELECTION OF PENETRANT

Penetrants are classified in AMS 2644 by type, application and sensitivity. The selection of an appropriate process is generally determined by:-

- a. The size of defect to be detected.
- b. The nature of the surface.
- c. Specification requirements

SOLVENT REMOVABLE PENETRANTS

The water washable and post emulsifiable penetrant materials listed below are also designed and approved for use as solvent removable and can be used for local inspection with Ardrex 9PR50C Remover and Precleaner and Ardrex 9D1B Non Aqueous Wet Developer.

ARDROX NO.	DESCRIPTION	AMS 2644 CLASSIFICATION
WATER WASHABLE PENETRANTS		
907PB	Red Dye Penetrant for use in general engineering applications. Available in bulk or aerosol.	Type II Methods A & C
970P24	Medium Sensitivity Fluorescent Penetrant for use on castings and machined components.	Type I Level 2 Methods A & C
970P25	High Sensitivity Fluorescent Penetrant. Available in bulk or aerosol.	Type I Level 3 Methods A & C
970P26E	Ultra High Sensitivity Fluorescent Penetrant	Type 1 Level 4 Methods A & C

ARDROX NO.	DESCRIPTION	AMS 2644 CLASSIFICATION
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POST EMULSIFIABLE PENETRANTS

985P11	Low Sensitivity Fluorescent Penetrant.	Type I Level 1 Methods B,C & D
985P12	Medium Sensitivity Fluorescent Penetrant.	Type I Level 2 Methods B, C & D
985P13	High Sensitivity Fluorescent Penetrant. Available in bulk or aerosol.	Type I Level 3 Methods B, C & D
985P14	Ultra High Sensitivity Fluorescent Penetrant.	Type I Level 4 Methods B, C & D

PENETRANT REMOVERS

9PR3	Lipophilic Emulsifier used as supplied in conjunction with 985 Series Penetrants.	Type I Levels 1,2,3 & 4 Method B
9PR12	Hydrophilic Emulsifier Concentrate used at 10% dilution in water with 985 Series Penetrants.	Type I Levels 1,2,3 & 4 Method D
9PR50C	Solvent Remover and Precleaner used as supplied, non halogenated, rapid drying. Available in Aerosol.	Class 2
9PR70	Solvent Remover and Precleaner used as supplied, non halogenated, slow drying.	Class 2

DEVELOPERS

9D1B	Non Aqueous, Non Halogenated Wet Developer. Available in aerosols for use with Red or Fluorescent Penetrant.	Form d Type I & II
9D2	Aqueous Wet Suspension Developer for use with Red Dye Penetrant. DTD 929.	
9D4A	Dry Developer Powder for use with Fluorescent Penetrant.	Form a Type I Systems

IN SERVICE TESTING

Chemetal (Australasia) Pty Limited provides in service testing of Ardrex penetrants to the applicable requirements of ASTM E 1417. Written reports on the results are provided. A service is also offered for the recalibration, where applicable, of various pieces of equipment shown in this brochure. Certificates are provided which are traceable to national standards.

MAGNETIC PARTICLE

Unlike penetrant inspection materials which are selected on sensitivity and background, the various ARDROX Magnetic Inks are selected primarily on the basis of their colour contrast with the component and the ease of use. The sensitivities of the various coloured and fluorescent inks being somewhat similar

ARDROX NO.	DESCRIPTION
800/3	High Sensitivity Black Magnetic Ink in a solvent carrier – ready to use. AMS 3041C, ASME Boiler and Pressure Vessel Code Section V. Also available in aerosol. AMS 3043B.
800/40	High Sensitivity Black Magnetic Ink, water based concentrate. Particles meet AMS 3042C and ASME Boiler and Pressure Vessel Code Section V.
800/51	High Sensitivity Black Magnetic Paste Concentrate. Meets AMS 3041C and ASME Boiler and Pressure Vessel Code Section V on dilution with Base Oil SC2.
800/100	Black Magnetic Powder for use in dry powder form. AMS 3040B.
810/3	High Sensitivity Brown/Red Magnetic Ink in a solvent carrier – ready to use. AMS 3041C, ASME Boiler and Pressure Vessel Code Section V.
810/51	High Sensitivity Brown/Red Magnetic Paste Concentrate. Meets AMS 3041C and ASME Boiler and Pressure Vessel Code Section V on dilution with Base Oil SC2.
810/100	Brown/Red Magnetic Powder, for use in dry powder form. AMS 3040B.
820/100	Grey Magnetic Powder for use in dry powder form.
8511	High Sensitivity Fluorescent Magnetic Powder Concentrate for easy dispersion in solvent and viewing under ultra violet light. AMS 3044D and ASME Boiler and Pressure Vessel Code Section V.
8561	High Sensitivity Fluorescent Magnetic Ink in a solvent carrier – ready to use, for viewing under ultra violet light. AMS 3045C and ASME Boiler and Pressure Vessel Code Section V. Also available in Aerosol. AMS 3046D.
8571	High Sensitivity Fluorescent Water Based Magnetic Ink Concentrate, for viewing under ultra violet light. Particles meet AMS 3044D and ASME Boiler and Pressure Vessel Code Section V.
8901W	Very Rapid Drying White Background Lacquer, for use with non-fluorescing magnetic particle to provide contrast. BS 5044 and ASME Boiler and Pressure Vessel Code Section V.
5319	Solvent Cleaner and Remover for white background lacquer.
Base Oil SC2	High Flash Point, Low Aromatic Base Oil for dispersion of Ardrex 800/51, 810/51 and 8511 to produce a working suspension of magnetic particle. Meets the requirements of AMS 2641 Type II.

EQUIPMENT AND ACCESSORIES

NICKEL CHROME TEST PANELS BCI 84/4

The BCI 84/4 Nickel Chrome Test Panels are ideally suited for in service control of in process penetrant materials. The panels are sufficiently large to enable side by side comparisons to be carried out. Excellent panels for teaching aid and demonstration of penetrant inspection.



FIVE STAR TEST PANELS TAM 146040 BCI 84/5



Five Star monitoring and testing panels are used as a quick and efficient means for determining the continued serviceability of penetrant inspection systems. Five Star TAM panels are suitable for carrying out the daily system performance checks as detailed in ASTM E 1417. The panels also meet the requirements of TAM 146040. Five Star monitoring and testing panels come equipped with a steel handle which acts as a holder, hangar and stand.

FIVE STAR TWIN TESTING PANELS BCI 84/52

Five Star Twin Testing Panels are manufactured from a single panel which is subsequently sheared in half after plating, grit blasting and the production of indications. This method of manufacture produces almost identical twin testing panels permitting side by side comparison of in use and unused penetrants as detailed in the specification ASTM E 1417. The type of plating also eliminates the glare produced by polished chrome of TAM Panels



TRICON RINSE GUN MODEL 400501

Heavy duty spray wash gun, producing a coarse spray, for low pressure rinsing of penetrant from parts. Specified for use on aircraft parts.

AIR WATER GUN

Used for removal of excess penetrant from porous castings where high pressure rinsing may be necessary.



MODEL 1025 ULTRA VIOLET HAND LAMP

The Model 1025 UV Lamp is a high intensity hand lamp with a nominal output of 4000 microwatts per square cm at 38 cm. This lamp is of rugged construction for use in industries ranging from foundries to the aviation industry. Fitted with a 60 cm coiled cord which extends to 3.6 m.

LABINO ULTRA HIGH INTENSITY UV LAMP

High performance UV inspection lamps using state of the art technology. Rugged construction which can be readily converted into either floodlight, midlight or spotlight by simply changing reflector. Available in mains powered, battery powered or the versatile battery/mains combination. UV output ranging from 4,000 to greater than 50,000 microwatts per square cm at 38cm depending upon the reflector used.



DLM 1000 DIGITAL LIGHT METER

The DLM 1000 Light Meter is a portable battery powered light meter which measures the intensity of both UV light in the range of 320-380 nanometers and visible light in the range of 380-700 nanometers. The light meter is calibrated within 5% of standards traceable to the National Standards Bureau.



MAGNETIC FIELD STRENGTH METER MD 220

The MD 220 is a portable hand held instrument with digital display for measuring magnetic fields of ± 199.9 Gauss with an accuracy of $\pm 2\%$. Fitted with a removable Hall effect probe, the Model 220 measures AC and DC fields on a continuous basis, or sample and hold. Meets ASTM E 1444.

ELECTROMAGNETS AND PERMANENT MAGNETS

A lightweight, hand held Electromagnet with double articulated legs which operates from 240 volts AC. Conforms to AS 1171 and ASTM E 1444. Also available in AC/DC, battery, cordless and underwater versions. Permanent Magnets are also available.



KETOS RING



ANSI Ketos Tool Steel Ring for checking the system performance of magnetic particle inspection procedures under DC current flow conditions. Contains successively deeper drilled holes simulating subsurface discontinuities which can be revealed as surface indications at various magnetising currents as detailed in AS 1171 and ASTM E 1444.

MAGNETIC FIELD STRENGTH INDICATOR BCI 87/921

This pocket sized Magnetometer is used to detect residual magnetisation in parts which have undergone inspection. Calibrated in Gauss.



MAGNETIC PENETRAMETER BCI 87/922

This easy to use Magnetic Penetrameter is a reliable instrument for determination of defect detection capability of the testing system at any location on an object being tested. Meets ASME, AS 1171 and ASTM E 1444.

SETTLING TUBE ASTM D96 BCI 87/908

Consistency of results in wet method magnetic particle rely on maintenance of the particle suspension bath. The BCI 87/908 is designed for measuring particle concentrations down to 0.05%.



All reasonable endeavors have been made to ensure that the information contained in this Data Sheet is accurate, but it is submitted on the express condition that, subject to the conditions of the Trade Practices Act and relevant State Legislation, all information and recommendations stated herein are given without warranty or condition express or implied and Chemetall (Australasia) Pty Limited shall be under no liability whatsoever in respect thereof or for any loss, injury, damage or liability of whatsoever nature howsoever arising, suffered or incurred as a consequence of the use of the above product.

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