

# Product Data Sheet

## AkzoNobel Powder Coatings

### Resicoat R4-ES Fusion Bonded Epoxy

#### Product Description

Resicoat R4-ES is a functional fusion bonded epoxy powder coating designed for use on valves and fittings in contact with potable water. Resicoat R4-ES typically offers full corrosion protection of valves and fittings with excellent adhesion, excellent resistance to cathodic disbondment, good flexibility, good chemical stability and excellent heat resistance. The fast cure properties of Resicoat R4-ES make it suitable for applications where consistent film thickness is required.

The Resicoat R4-ES series meets the performance requirements of AS/NZS 4158:2003 and complies with the water quality requirements of AS/NZS 4020:2005.

#### Powder Properties\*

<b>Chemical type</b>	Epoxy
<b>Particle size</b>	Suitable for electrostatic spray or fluidised bed application
<b>Specific gravity</b>	1.3 – 1.4 g/cm <sup>3</sup>
<b>Moisture</b>	0.7% max
<b>Stability</b>	6 months ≤ 25° C
<b>Gel Time</b>	20 ± 7 seconds at 200°C
<b>Film Thickness</b>	>300µm external, >350µm internal
<b>Stoving Schedule (For valves and fittings)</b>	Spray – 10 minutes at 180°C (metal temperature) Dip – preheat object to (metal temperature) ≥ 195° C No post cure required if wall thickness > 6mm

#### Film properties

<b>Impact Resistance</b>	AS/NZS 4158 Section 2.3.5	> 2.0J
<b>Flexibility</b>	AS 3862	No cracking at 0°C and 1% strain
<b>Cathodic Disbondment</b>	AS 3862 Appendix M (28 days at 23°C)	r < 15mm
<b>Hot Water Immersion</b>	AS 3862 (14 days at 50°C)	Rating < 1
<b>Water Absorption</b>	AS 3862 (100 days at 23°C)	< 4%
<b>Abrasion Resistance</b>	ASTM D4060 (CS17, 1000g, 1000 cycles)	< 40mg loss
<b>Thermal Stability</b>	AS 3862 (100 days at 100°C)	No cracking at 1.0% strain
<b>Ultraviolet Radiation</b>	ASTM D2565 Type B (100 days)	No cracking at 1.0% strain

#### Effect on Water Quality

<b>Taste of Water</b>	AS/NZS 4020 Part 1 and 2	Complies
<b>Appearance of Water Extract</b>	AS/NZS 4020 Part 1 and 2	Complies
<b>Growth of Aquatic Micro-organisms</b>	AS/NZS 4020 Part 1 and 2	Complies
<b>Cytotoxic Activity of Water Extract</b>	AS/NZS 4020 Part 1 and 2	Complies
<b>Mutagenic Activity of Water Extract</b>	AS/NZS 4020 Part 1 and 2	Complies
<b>Extraction of Metals</b>	AS/NZS 4020 Part 1 and 2	Complies
Resicoat R4-ES satisfies the criteria of AS/NZS 4020:2005 Products for use in contact with drinking water for hot and cold water applications.		

#### Pre-treatment (Cast iron)

Remove any oil, grease, dust or graphite with suitable solvent, and any salt deposits with fresh water. Grit blast to SA 2 ½ with a surface profile of 50-80 microns, cleaning blasted surface by air blast, brushing or suction. Use gloves to avoid hand contact. Grind out any defects and reblast if necessary. Ensure < 4 hours from blast to coat.

# Resicoat R4-ES Fusion Bonded Epoxy

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## Application

Preheat using furnace or induction heating as per above curing recommendations. Apply powder via fluidised bed application and test a sample of each product batch to AS/NZS 4158:2003 Section 3 Requirements for Factory-applied Coating for quality control purposes. Small defects in the coating can be repaired using Interplus 1180 if required (available from International Protective Coatings).

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## Performance

AkzoNobel's liability is strictly limited to replacing such quantity of powder coating as proved to be defective. Before using the powder coating the user shall determine its suitability for his intended use and the user assumes all risk and liability.

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## Safety Precautions

This product is intended for use only by professional applicators in industrial environments and should not be used without reference to the relevant health and safety data sheet, which AkzoNobel has provided to its customer. If for any reason a copy of the relevant health and safety data sheet is not immediately available the user should contact AkzoNobel to obtain a copy before using the product. Minimum safety precautions in dealing with all powder coatings are as follows. All dusts are respiratory irritants. Therefore, inhalation of the dust or of the vapors resulting from the cure should be avoided. Take steps to prevent skin contact, but should contact occur, wash skin with soap and water. In case of eye contact flush immediately with clean water and seek medical advice. Dust clouds of any finely divided organic material can be ignited with an electric spark or open flame. Dust and powder should not be allowed to build up on surfaces or ledges. Dust collection equipment should be used which has provision for adequate explosion release. All equipment should be electrically earthed to prevent build up of static. Users are recommended to follow the guidelines laid down in AS3754:1990, "Safe Application of Powder Coatings by Electrostatic Spraying".

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## Disclaimer

**IMPORTANT NOTE: The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advices given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product. Unless otherwise agreed by us in writing, any contract to purchase products referred to in this brochure and any advice which we give in connection with the supply of products are subject to our standard conditions of sale. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous product development.**

\* Typical minimum specifications. Performance may vary slightly between individual products.  
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