

Technical Data Sheet

AS-4005 / AS-4005S Cleanroom MS Sealant

Physical Properties

Appearance:
Soft paste
(before cure)

Elastic rubber
(after cure)

Colours:
White, grey & black

Tack-free time:
20 – 60 minutes

Application temperature:
5 °C to 40 °C

Service temperature:
-20 °C to 90 °C

Storage:
Store in a dry and cool place
with temperature below 30 °C.

Shelf life:
9 months (cartridge)
12 months (sausage)

Packaging:

Content	Quantity/ carton
290 mL cartridges	20
600 mL sausages	20



Description

ALSEAL Cleanroom MS Sealant is a single-component, paintable elastomeric sealant that is based on advanced MS Polymer technology. Its special formula is compliant to SCAQMD Rule 1168, hence recommended for applications in green buildings.

AS-4005 is also formulated for environments where particles and TVOC emissions in the air and working surfaces cannot be tolerated. It releases virtually no air contaminants into the ambient environment, as tested according to ISO 14644-8, -15; ISO 16000-6, -9, -11, -25; and VDI 2083 Part 17 by CSM (Cleanroom Suitable Materials). Therefore, AS-4005 is also recommended for applications in semiconductor/electronics, aerospace, and automotive cleanrooms.

Unlike Polyurethane sealants, its solvent-less and isocyanate-free content eliminates sealant shrinkage and bubbling problems. It is also free of silicone oil, minimizing building aesthetic issues caused by oil-staining and dirt-streaking problems often associated with silicone sealants.

Features

- ◆ Cleanroom sealant (white only)
- ◆ Low VOC
- ◆ Good UV resistance
- ◆ Paintable
- ◆ Low static charge – Less dirt streaking
- ◆ No silicone oil – *Non-staining on adjacent substrates*
- ◆ No isocyanate – *No blistering*
- ◆ No solvent – *No shrinkage*
- ◆ Bonds most substrates without primer

Applications

AS-4005 is recommended for various sealing applications in green buildings like sealing concrete joints (precast wall panels, expansion joints, control joints, FRC boards, etc.), window & door frame perimeter, etc. It is also recommended for use in cleanroom environments like manufacturing/operations plants in semiconductors, solar panels, hard disc, flat panel screens, optical equipment, microsystems, automotive, and aerospace industries. Other applications include sealing of anodized aluminum, masonry, porcelain, coated metal, finished wood, epoxy and polyester panels, UPVC, polystyrene, and stainless steel.

Technical Data

Curing system	: Moisture curing
Density	: 1.54 g/mL
Ultimate tensile at break (ASTM D412)	: 1.1 N/mm ²
Elongation (ASTM D412)	: 600 %
Shore A hardness (ASTM C661)	: 25 – 35
VOC content (USEPA Method 24)	: 17.91 g/L
ISO-ACCM Class (ISO 16000)	: -7.1 (White Colour)

Approvals/ Specifications

AS-4005 meets the requirements of the following specifications:

- ◆ Low VOC - USEPA Method 24 under SCAQMD Rule 1168
- ◆ Cleanroom Suitable Material (CSM) ISO-ACCM Class -7.1 (AS-4005 White)
- ◆ Good Environmental Choice Australia (GECA) certified



AS-4005 Green MS Sealant

Usage Instructions

1. Surfaces must be clean, dry and free of dirt, grease, oil or water.
2. Surfaces should be cleaned with alcohol, M.E.K. or other suitable solvent. Do not use soap or detergent.
3. For a neat finishing, apply masking tape and remove it before sealant skins over.
4. 602 Primer is recommended for porous substrates such as concrete for excellent adhesion.
5. Cut the tip off and puncture the internal foil seal with the nozzle. Cut the nozzle at 45° angle to desired bead-width and apply the sealant to substrate with a cartridge gun.
6. Tool the sealant before it skins.
7. Uncured sealant can be cleaned up with mineral spirits.
8. Use approved backing material for joints over 10 mm deep.

Clean Up

- ◆ Wet sealants can be cleaned up with acetone or mineral spirits.
- ◆ Cured sealants can only be removed mechanically.

Joint Design

- ◆ Joint dimension should be designed by taking into consideration the movement capability of the sealant and the anticipated joint movement
- ◆ Generally the joint width-to-depth ratio is 2:1 for joint width ≥12 mm, or 1:1 for joint width <12 mm
- ◆ Joint width: minimum = 6 mm, maximum = 35 mm *
- ◆ Joint depth: minimum = 6 mm, maximum = 12 mm

* Sealing joints with larger joint width is possible but sealant may sag in vertical applications.

Coverage

Width	Depth	Coverage (290 ml) *	Coverage (600 ml) *
6 mm	6 mm	7.32 meter	15.15 meter
10 mm	10 mm	2.64 meter	5.45 meter
20 mm	10 mm	1.32 meter	2.73 meter
25 mm	12 mm	0.88 meter	1.82 meter

* The coverage figures shown above are approximate linear meter run based on 10% wastage assumption. Actual coverage may vary.

- ◆ Calculation formula: $X / [(Y \times Z) \times 1.1] = \text{Coverage}$

X = volume of cartridge (or sausage) in ml,

Y = joint width in cm, **Z** = joint depth in cm,

1.1 = 10% wastage assumption,

Coverage = linear meter run in cm per cartridge

Limitation

Not recommended for the following applications:

- ◆ Below waterline or permanent water immersion.
- ◆ Outdoor sealing/bonding adjacent to glass substrates.
- ◆ Polyethylene, polypropylene, polytetrafluoroethylene (Teflon), neoprene, and bituminous surfaces.
- ◆ Overcoated with
 - Alkyd resin paint - cure inhibition to the paint
 - Chlorinated paint - staining issue
 - Oil based paint - not compatible

Caution

Keep out of reach of children. Contains aminosilane. May produce an allergic reaction. Safety data sheet available on request. For further health and safety information, consult the latest safety data sheet.

Warranty Information

Alseal Marketing provides material warranty for a duration of 5 years if the product is used within its shelf life and in compliance with industrial standard application procedures. We disclaims liability for any consequential or incidental loss or damages caused by incorrect usage. The material warranty only covers the replacement of the product without the other costs incurred, if the failure is proven to be directly related to the product within the warranty period. Material warranty will only be available once customer submits all the necessary documents and information, and an official material warranty letter is issued by Alseal Marketing. Any claim of warranty shall be made directly to Alseal Marketing in writing. Alseal Marketing shall hold no responsibility until site inspection by representatives of Alseal Marketing to confirm the alleged failure has been carried out.

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