

# AS1604 (1050N) 1-Part Adhesive Sealants

# Introduction

AS1604 is a ready to use neutral cure one part room temperature vulcanising elastomer. It has been specially formulated for use in industrial applications where low -corrosion is a prerequisite. AS1604 cures readily in moist air to a tough, permanently elastic rubber. It exhibits good adhesion to most non-porous substrates, particularly plastics, without the use of a primer. AS1604 in its cured state exhibits excellent resistance to certain petroleum fractions used as automotive fuels (see text).

#### Resistance to Fuels

Standard test dumb-bell pieces of cured AS1604 were cut from 3 mm thick sheets and totally immersed in 4-star petrol (B.S. 4040) and in unleaded petrol (B.S. 7070) for 24 hours.

As expected, considerable swelling of the test pieces occurred (approximately 50%). The test pieces were removed and retested after 24 and 48 hour drying periods. Typical results are shown in the following table (no significant difference was found for the results obtained with each grade of fuel).

## Petrol Immersion Tests on AS1604

(Tests carried out on dumb-bells after 3 days curing period)

Test applied	Untreated	Immersion time: 24h	
		Drying time at 20°C	
		24 h	48 h
Hardness, °IRHD	56	40	45
MPa (p.s.i.)	1.8 (260)	1.9 (275)	2.0 (290)
Elongation at break	380	260	320

# **Use and Cure Information**

## How to Use

AS1604 is ready for use. If supplied in cartridges it can be applied using either manual or pneumatic dispensers.

It can also be applied from bulk containers using conventional drum dispensing equipment.

#### Application and Cure

All surfaces to which AS1604 is to be applied should be clean, dry and free from grease, dirt, and loose material.

Priming of surfaces is not normally required.

If AS1604 is being employed as an adhesive, it should be applied to one clean surface and the other clean surface brought into contact with it within 15 to 20 seconds.

For optimum bond strength the thickness of the sealant joint is 1 to 2mm.

Joints should be left undisturbed for at least 24 hours, but preferably longer to effect sufficient depth of cure. Full cure requires 7 days.

Property	Test Method	Value
Uncured Product		
Colour:		Black
Appearance:		Matt Black paste
Tack Free Time:		3 minutes *
3mm Cure Through:		<12hours *
Extrusion Rate:		260g / minute
* measured at 23+/-2°C and	65% relative hun	nidity

\* measured at 23+/-2°C and 65% relative humidity.

#### **Cured Elastomer**

(after 7 days cure at 23+/-2°	°C and 65% relative	humidity)
Tensile Strength:	BS903 Part A2	2.00 MPa
Elongation at Break:	BS903 Part A2	250 %
Youngs Modulus:		0.50 MPa
Modulus at 100% Strain:	BS903 Part A2	1.15 MPa
Tear Strength:	BS903 Part A3	7.00 kN/m
Hardness:	ASTM D 2240-95	50° Shore A
Specific Gravity:	BS 903 Part A1	1.40
Linear Shrinkage:		0.8 %
Thermal Conductivity:		0.30 W/mK
Coefficient of Thermal		
Expansion:		
Volumetric		837 ppm / °C
Linear		279 ppm / °C
Min. Service Temperature:		-50 °C
Max. Service Temperature:	AFS 1540B	240 °C

## **Electrical Properties**

Volume Resistivity:	ASTM D-257	$6.6x10^{15}\Omega.cm$
Surface Resistivity:	ASTM D-257	4.75x10 <sup>15</sup> Ω
Dielectric Strength:	ASTM D-149	18 kV/mm
Dielectric Constant at 1MHz:	ASTM D-150	3.00
Dissipation Factor at 1MHz:	ASTM D-150	2.5x10 <sup>-3</sup>

# **Adhesion Testing**

Good unprimed adhesion to many substrates including glass stainless steel, aluminium and most plastics. Customers are advised to carry out their own tests on clean, degreased substrates to ensure satisfactory adhesion is achieved

All values are typical and should not be accepted as a specification.

**Health and Safety** – Material Safety Data Sheets are available on request.

Packages – 310 ml cartridges and 20 litre bulk containers.

Storage and Shelf Life – Expected to be 12 months in original, unopened containers below 30°C.

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