



# Scotch-Weld™

## 3901 Structural Adhesive Primer

### Product Data Sheet

Updated : March 1996  
Supersedes : November 1993

#### Product Description

3901 is a primer for Scotch-Weld film or liquid adhesives in those applications where it is desired to obtain improved adhesion or improved resistance to environmental exposure.

Ensures complete wetting of film adhesive to adherend surfaces.  
Simplifies production scheduling by protecting the cleaned surfaces until the bonding operations can be completed.

Imparts corrosion protection to metal.

#### Physical Properties

Not for specification purposes

<b>Base</b>	Synthetic Resin	
<b>Solvent</b>	Methanol	
<b>Flash Point</b>	+ 12°C	
<b>Viscosity at 27°C (80°F)</b>	5 ± 2 cP (Brookfield RVF No. 1 spindle 20 RPM)	
<b>Specific Gravity</b>	0.78 (approx)	
<b>Colour</b>	Red	
<b>Shelf Life</b>	12 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

#### Product Performance

Not for specification purposes

#### Overlap Shear Strength (N/mm<sup>2</sup>)

The following data shows data using 3901 on various metal substrates.

Adherend	-55°C	24°C	82°C
50 MIL 6-4 Titanium Alloy	47 PSI	40 PSI	25 PSI
50 MIL 17-7 Stainless Steel	70.4 PSI	43.5 PSI	24.8 PSI

**Directions for Use**

**Application:**

A thoroughly cleaned, dry, grease free surface is essential for maximum performance. Cleaning methods which will produce a break-free water film on metal surfaces are generally satisfactory.

Surface preparations should be fully evaluated with the adhesive, especially if resistance to specific environments are anticipated.

**Surface Preparation**

**Suggested Cleaning Procedures for Aluminium.**

**1. Vapour Degrease** - Perchloroethylene condensing vapours for 5 - 10 minutes.

**2. Alkaline Degrease** - Oakite 164 solution (11-14 oz/ gallon water) at 88°C ± 6°C (190°F ± 10°F) for 10-20 minutes. Rinse immediately in large quantities of cold running water.

**3. Acid Etch** - Place panels in either of the solutions in the table below for 10 minutes at 66°C ± 6°C (150°F ± 10°F).

**4. Rinse** - Rinse panels in clear running water.

**5. Dry** - Air dry 15 minutes, force dry 10 minutes at 66°C ± 6°C (150°F ± 10°F).

**6.** It is advisable to coat the freshly cleaned surfaces with 3901 within four hours after surface preparation.

**7.** Care should be taken to avoid contaminating the cleaned aluminium by any substance which will hinder the wetting action of 3901.

**8.** When using chemicals for clean up procedures, refer to manufacturers' safety instructions.

	<b>A (FPL Etch)</b>	<b>B</b>
Distilled Water	30 parts by weight	30 parts by weight
Sulphuric Acid (Conc.)	10 parts by weight	10 parts by weight
Sodium Dichromate	1 part by weight	4 parts by weight

**Primer Application**

3901 has been successfully applied by spraying and brushing.

The following spray equipment is suggested to obtain optimum results.

(NOTE: Only a micro-molecular layer of primer is required)

Spray Gun	DeVilbiss MBC
Air Cap	No. 78
Needle-Nozzle	AV-15-FX
Line Pressure	60-80 PSI
Pot Pressure	1-2 PSI
Distance from Panel	14 ± 3 inches
Primer Thickness (dry)	Less than .0001"

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<b>Primer Dry</b>	<p><b>The following cycle is suggested for 3901:</b></p> <p><b>Air Dry</b> - Air dry at 24°C to 30°C (75°F to 85°F) for a minimum of one hour.</p> <p><b>Force Dry</b> - Circulating air oven at 80°C (190°F) for 30 minutes.</p> <p>Air dry cycles for periods as short as ½ hour have been used successfully with the force dry cycle.</p>	<p>Humidity contributes greatly to satisfactory use of this primer. Relative humidity of 25% or lower may cause difficulties and should be thoroughly evaluated in the customer's application.</p> <p>Air drying cycles without forced dry cycles have also been successful, where optimum bond strength is not a requirement. This should again be evaluated in the Customer's application.</p>	<p>The primed surface, after cooling to ambient temperatures, is ready for adhesive bonding. The primed surface should be protected from contamination introduced by dust, fingerprints, oil etc.</p>
<b>Primer Clean Up</b>	<p>Excess primer and equipment may be cleaned up prior to curing with Ketone type solvents.</p>	<p><b>NOTE:</b> Ketone solvents are flammable.</p>	<p>When using solvents for clean up it is essential that proper precautionary measures be observed.</p>
<b>Storage Conditions</b>	<p>Store product at 16°C to 27°C (60°F to 80°F) for maximum storage life. Higher temperatures reduce normal storage life.</p>	<p>This material is purposely packaged in small mouth glass bottles in order to prevent premature reaction of the active ingredients</p>	<p>with atmospheric moisture or metallic surfaces.</p>
<b>Precautionary Information</b>	<p>Refer to product label and Material Safety Data Sheet for health and safety information before using the product.</p> <p>For information please contact your local 3M Office.</p> <p><a href="http://www.3M.com">www.3M.com</a></p>		
<b>For Additional Information</b>	<p>To request additional product information or to arrange for sales assistance, call.....</p> <p>Address correspondence to: 3M</p>		
<b>Important Notice</b>	<p>All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method or application. All questions of liability relating to this product are governed by the terms of the sale subject, where applicable, to the prevailing law</p>		
<b>Note</b>	<p>Values presented have been determined by standard test methods and are average values not to be used for specification purposes.</p> <p>Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.</p> <p>This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations</p>		

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