

ACC34 Thinner

Introduction

ACC34 Thinner is a low viscosity silicone diluent that can be employed as viscosity modifier for many 1-Part RTV sealants, and conformal coatings. It is available as the standard version and an optional UV fluorescing version (ACC34UV). The ACC34UV version is especially recommended for higher dilution ratios of ACC15, 16 and 17 to maintain a high level of UV fluorescence

ACC34 Thinner is volatile. It will be lost slowly at room temperature from a thin section of cured silicone rubber or coating, but is readily removed at temperatures from 80°C to 150°C. In the case of 1-Part RTV's this heating cycle is best carried out after 8 hours of curing, for ACC16, the heating cycle can begin after 90 minutes of curing and for ACC17 the heating cycle can begin after 16 to 40 minutes of curing, depending on the dilution ratio.

ACC34 Thinner has not been classified as a Volatile Organic Compound (VOC) and no legislation to this effect is expected. It is a cosmetically approved ingredient and is a much safer choice than conventional organic solvents for many reasons, a few of which are:-

- wide liquid temperature range
- odourless
- not regarded as an environmental hazard
- extremely low toxicity (Oral LD₅₀ = 35,000 mg/kg)
- compatible with virtually all silicones
- very low surface tension (<18 N/m) which enhances spreading of films.
- good rate of evaporation considering its high boiling point (205°C), due to unusually low heat of vaporisation.
- high Flash Point (not classified as Flammable)

General Characteristics

Appearance	clear, colourless liquid
Odour	Odourless
Boiling Point	205°C
Melting Point	< - 50°C
Latent Heat of Vaporisation:	113 KJ/kg
Surface Tension :	18 N/m (dynes/cm)
Viscosity at 25°C	5 mm ² s ⁻¹ (cst)
Auto ignition Temperature	>400°C
Flash Point	77°C
Evaporation Rate at 22°C	12
	Butyl acetate = 100
	White spirit = 14

How to Use ACC34 Thinner

1. For 1-Part RTV Sealant Adhesives

There are applications, particularly in the art world of special effects, where a paint-able or spray-able form of the 1-Part Silicone RTV Sealant/Adhesive is required. Most 1-Part Silicone RTV's can be dispersed readily in ACC34 Thinner for immediate use as paint-able or spray-able dispersions. Formulations depend on the nature of the RTV employed i.e. flow-able or non-slump. A typical formulation of a translucent silicone sealant for spraying is

ACC Silicone Sealant*	30 to 50 parts
ACC34 Thinner	70 to 50 parts

* ACC AS1521, AS1602 or Silcoset 153

Unless special anhydrous mixing facilities and special packaging are available, customers are advised to make up small quantities as required.

After painting or spraying the substrate with the diluted RTV, the product should be allowed to cure at ambient temperature. With thin coatings, ACC34 Thinner will evaporate from the surface in approximately 24 hours, and will be down to less than 10% in this time at 20 to 25°C.

If further removal is necessary, this can be achieved by heating the fully cured coated article to 50°C for about 2-3 hours to 120°C for 5 to 10 minutes. The exact times and temperatures will depend on the substrate and coating thickness.

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2. Use with ACC Silicone Conformal Coating

SPRAYING

ACC15

Using a Nordson SC-300 swirl coat at 50 mm/second and 40 psi the ACC15 can be used undiluted to achieve a coating thickness of 400 microns which is touch dry in 11 minutes and fully cured in 20 minutes at 25°C and 55% humidity

Using a Nordson SC-300 swirl coat at 80 mm/second and 80 psi the maximum recommended dilution ratio is:

50 parts ACC16
50 parts ACC34

A coating thickness of 200 microns can be achieved which is touch dry in 16 minutes and fully cured in 40 minutes at 25°C and 55% humidity.

ACC16

Using a Nordson SC-300 swirl coat at 100 mm/second and 30 psi the maximum recommended dilution ratio is:

70 parts ACC16
30 parts ACC34

A coating thickness of 350 microns can be achieved which is touch dry in 8 minutes and fully cured in 90 minutes at 25°C and 55% humidity. Higher dilutions of ACC16 are not recommended and will result in poor curing and a tacky coating.

ACC17

Using a Nordson SC-300 swirl coat at 600 mm/second and 80 psi pressure, the maximum recommended dilution ratio is:

80 parts ACC17
20 parts ACC34

A coating thickness of 300 microns can be achieved which is touch dry in 5 minutes and fully cured in 16 minutes at 25°C and 55% humidity.

Using a Nordson SC-280 film coater at 600 mm/second and 80 psi pressure, the maximum recommended dilution ratio is:

80 parts ACC17
20 parts ACC34

A coating thickness of 80 microns can be achieved which is touch dry in 5 minutes and fully cured in 16 minutes at 25°C and 55% humidity.

For manual air guns (e.g. Devilbliss etc) use ACC34 Thinner - typically 1 part ACC17 to 1 part ACC34 thinner for a 100 mPa.s viscosity. The nozzle of the spray gun needs to be selected to give an even spray to suit the selected viscosity of the coating material. The normal spray gun pressure required is $27.6 - 34.5 \times 10 \exp 6\text{-kN/m} \exp 2$ (40-50 psi).

Evaporation of ACC34 in coatings of 80 to 350 microns:

<u>Temperature, °C</u>	<u>Time</u>
16	48 hours
45	24 hours
60	1.5 hours
125	0.5 hours

BRUSHING

The coating should be used at room temperature (16 to 45°C), using a good quality brush apply the product gently such as to achieve a good coating and not to disturb wiring. The board should be left to cure at 16 to 45°C with a relative humidity of >40%.

CURING TIMES / CONDITIONS

For brushing and manual spraying the coating will be touch dry after a maximum of 12 minutes at 25°C / 55% humidity). When using the ACC34 Thinner, this will be extended to 90 minutes maximum depending on the coating selected and the dilution ratio used. The full properties of the coating will be obtained after evaporation of the ACC34 thinner, see above for evaporation times and guidance.

STORAGE

ACC34 Thinner should be stored in original closed containers to prevent contamination. In its original closed containers the shelf life is expected to be >5 years.

1 kg ; 5 kg ; 25kg and 200 kg

HEALTH AND SAFETY

Material Safety Data Sheets are available at: www.acc-silicones.com or upon request through the ACC Silicones sales office.

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