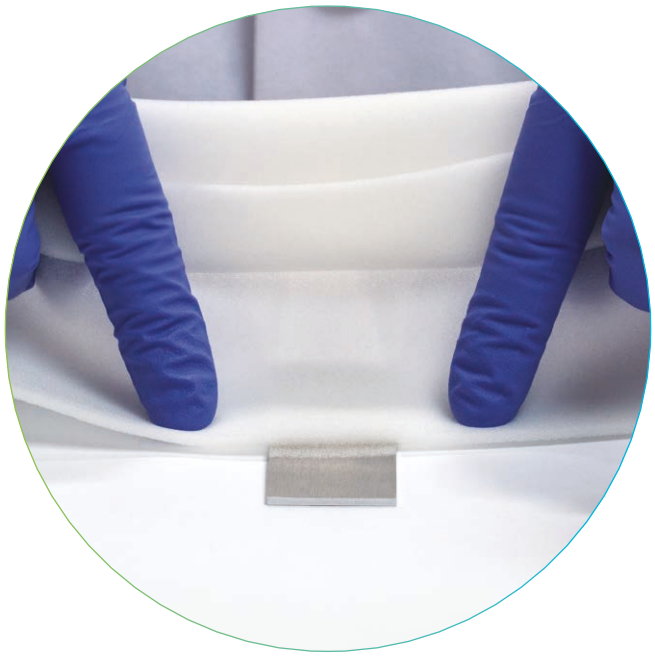
Silicone primer application and storage for optimal adhesion

Adhesion is a critical property for numerous applications involving silicone materials. Silicone primers are often used to improve adhesion between silicones and various substrates. The proper handling and application of silicone primers can enhance the overall strength and consistency of bonds. The following procedures are recommended for best bonding results.



STORAGE AND HANDLING

- Pour amount of primer needed for the day into a secondary container
- Discard any unused primer from secondary container. Do not place back in original bottle and do not leave uncovered for long periods of time
- Primer container should remain sealed when not in use because the primer will react with moisture and potentially reduce its effectiveness
- For long term storage, keep in original container. Once original container is opened it is recommended to fill empty head space in container with a dry inert gas, such as argon or nitrogen, before sealing container. The practice of inerting the head space of the secondary container can also be performed if prolonged use is desired
- The appearance of white solids indicates that the primer is becoming hydrolyzed and it's ability to increase adhesion will be reduced

IDEAL CONDITIONS FOR PRIMER APPLICATION

- **Conditions:** Should be room temperature, approximately 15°C to 25°C (60F-77F) and 30 - 80% relative humidity. Lower levels of humidity may require longer drying times before applying silicone
- **Ventilation:** Apply standard safety procedures when working with flammable materials
- **Apply a thin layer:** If the primer is too thick, it will form a powder-like substance and may result in decreased adhesion of silicone
- **Shake well:** to ensure contents are homogeneous

PRIMER APPLICATION METHODS

WIPING

- Use a clean wipe to apply primer to substrate in a thin uniform coat. Avoid using wipes that may contain dust, oil, and fibers. These items can cause interference with the primer performance. The reaction still occurs but contamination can reduce the primers effectiveness
- Remove excess primer by gently wiping in the other direction to ensure there is no visible pooling
- Sponge applicators can also be used

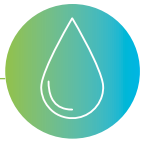
SPRAYING

- Recommend using a small gravity feed spray gun
- Mask areas where primer is not wanted
- Recommend spraying 3-5 inches (7.5 cm – 13 cm) from surface to be primed and adjust as needed
- Keep tip of spray gun submersed in solvent when not in use
- Primer may need to diluted as needed if white particulate is visible on the substrate

DIPPING

- Decant the amount of primer needed for application into separate container following the storage and handling recommendations herein
- Dip surface briefly in primer or secondary container, if applicable. If primer leaves white chalky appearance on the part, then dilution is required

DILUTING (if required)



Recommend starting with a one-to-one dilution of primer to solvent.

- In a glass or other appropriate container, weigh the amount of solvent needed, recommend starting with 1:1 ratio (solvent:primer)
- Displace air in headspace of glass container with inert gas such as dry nitrogen, argon, etc.
- Shake primer container to ensure contents are homogeneous, then add primer to glass container by weight
- Displace air in headspace of glass container again and shake to mix

NOTE: Volume can also be used to measure dilution.

To learn more about the application and recommendations for NuSil primers, visit: **avantorsciences.com/nusil** or contact a NuSil expert at **silicone@avantorsciencesgcc.com** or **+ 1 805 684 8780**

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