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# Material Innovation Allows Hot Melt Adhesion With Silicone Rubber in Mass Production

## *HMA Act as an Interlayer Adhesive to Create Strong Bonds With Silicone Rubber Sheets*

***Hsinchu, Taiwan, January 14, 2021 -*** Experienced silicone product maker, General Silicones (GS), announces a solution for using [hot-melt adhesives (HMA) with silicone rubber](http://www.compo-sil.com/modules/news/article.php?storyid=66#utm_source=Global_PR&utm_medium=PR_link&utm_campaign=TECHNOLOGY_HMA) sheets during factory mass production. Over the past decades, the use of hot melt adhesives grew in importance for product assembly. A growing number of industries are relying on HMA. Industry forecasts project continuous growth of HMA use for the coming years.

### Attaining Reliable Silicone Rubber Bonding With HMA Adhesives

Achieving [adhesion for silicone rubber](https://www.compo-sil.com/modules/news/article.php?storyid=57#utm_source=Global_PR&utm_medium=PR_link&utm_campaign=TECHNOLOGY_HMA) with HMA is difficult due to [silicone's low surface energy](https://www.compo-sil.com/modules/news/article.php?storyid=58#utm_source=Global_PR&utm_medium=PR_link&utm_campaign=TECHNOLOGY_HMA). Allowing HMA to act as an interlayer adhesive, the ***Compo-SiL®*** silicone rubber offers a deciding innovation for the HMA industry. HMA users can now take advantage not only two bind two dissimilar and lower surface energy material (silicone) but also getting various benefits that silicone rubber provides.

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GS produces silicone rubber sheets with a thin modified Polyurethane (PU) layer bonded to the silicone rubber. The ultra-thin PU layer allows the HMA interlayer adhesive to adhere/bond to the ***Compo-SiL®*** silicone rubber sheet if given proper process parameters. Heat and Pressure in adequate amounts is necessary for strong adhesion and bonding. With the application of heat the HMA melts and adheres to the surfaces properly when it is compressed. Solidification of the HMA interlayer adhesive depends on the amount of heat provided, thus it should be adequate so as to incur proper and faster solidification.

Internal tests by GS with various HMA showed exceptional adhesion. Excellent HMA bonding strength with ***Compo-SiL®*** was demonstrated by reaching either cohesive failure within the silicone layer of ***Compo-SiL®***.

### R2R Solution for Cured Silicone to Textile Bonding

General Silicones' ***Compo-SiL®*** combined with HMA provides the most uncomplicated R2R process with CURED silicone bonding to textile. Traditional printing silicone inks limit design freedom to clients. The adhesion of the silicone prints to fabrics using liquid adhesives is challenging and involves several process steps. But ***Compo-SiL®*** simplifies silicone bonding to textile material and speeds-up production with HMA as an interlayer adhesive.

***Suitable applications include:***

* ***Functional Textile Decoration***
* ***Silicone Based Vegan Leather***
* ***Smart & Wearable Electronics***
* ***Interior Trim & Automotive Textiles etc.***

Many prototypes (applications towards textile accessories, functional textiles, RFID and heater circuits on textile, stretchable substrates etc.) have already been developed by GS to prove the readiness of this technology for the textile industry.

Examples of Prototypes Developed by GS:

* Anti Slip Strips
* Boutique Package
* Encapsulation of Circuits
* Flexible Heaters
* Grating Effect Decorations
* Heat Transfer Decoration
* RFID Circuit
* Watch Strap
* Wound Healing LED Band

### Unlocking the Obstacles Faced by Multiple Industries

Features of silicone offer significant benefits useful in various situations. Silicone provides encapsulation. When used as an outer surface, it protects products from mechanical and chemical damage, extending durability.

The application of this technology is not limited to the textile industries but it can be utilized in multidisciplinary fields. The interior trim and automotive textile, consumer 3D logo printing, robotics automation safety and flexible electronics industries are a few examples of trades that can benefit from these characteristics. Additional useful silicone properties are UV stability, usability in high and low temperature, and electric discharge safety.

As HMA bonding is solvent-free and creates an elastic interlayer, it complements well the properties and benefits that silicone provides.

### Ideal for Medical Application, Textile Electronics and Green Products

HMA are solvent-free and low VOC emission adhesives. They match with medical-grade silicone and act to avoid and minimize plastic for green products.

Textile electronics based companies can use the printable silicone film. With the printable silicone film, flexible/stretchable circuits are could be realized by inkjet printing or screen printing and bonded to textiles with HMA. Alternative suggested applications are flexible heaters for winter apparel or flexible RFID circuits. Apparel brands create green prints and deco strips using ***Compo-SiL®*** silicone with existing roll-to-roll printing processes.

For more information on how to combine HMA processes with ***Compo-SiL®*** silicone rubber, contact the GS sales team at compo-sil@gsweb.com.tw, or visit [www.compo-sil.com](http://www.compo-sil.com/#utm_source=Global_PR&utm_medium=PR_link&utm_campaign=TECHNOLOGY_HMA)

***Compo-SiL®***: Part of your life!

### About General Silicones

General Silicones (GS) was founded in 1970 in Taipei, Taiwan, and is now represented worldwide – including Europe, China, Japan, and South-East Asian countries. GS is a major distributor of silicone materials and an active silicone products manufacturer with ISO 9001, IATF 16949, and ISO 14001 certifications. The company has manufacturing plants in Hsinchu, Taiwan; Wujiang, China; and Bac Giang, Vietnam. With decades of experience in this field, GS has the ability and capacity to provide a wide range of silicone products for many industries, including medical, automobile, consumer products, electronics, and IT. GS listed on Taiwan's Emerging Stock Market in 2011 (TPEx: 4730). For more information about GS, please visit www.generalsilicones.com. For more information on [www.generalsilicones.com](http://www.generalsilicones.com#utm_source=Global_PR&utm_medium=PR_link&utm_campaign=TECHNOLOGY_HMA). For more information on ***Compo-SiL®***, please visit [www.compo-sil.com](http://www.compo-sil.com/#utm_source=Global_PR&utm_medium=PR_link&utm_campaign=TECHNOLOGY_HMA)