

# Handling Instructions for Self-adhesive Products

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## Substrate Pretreatment

The substrate must be dry, free from dust, oil, release agents, and other impurities. Neither the substrate's surface nor the varnishes used are permitted to contain traces of silicone, paraffin, or waxes. Before applying the label, the substrate has to be cleaned or mechanically treated.

## Chemical Pretreatment

To remove dust, grease, oil, and release agents, the following cleaning agents can be used: isopropanol or a mixture of isopropanol and distilled water. (1:1 ratio) Caution: the suitability of solvents - especially MEK, toluene, acetone, heptane and others - must be confirmed with tests prior to their use. The safety guidelines of the manufacturers must be observed.

## Mechanical Pretreatment

After the removal of grease, the substrate can be roughened with an abrasive cloth. Adhesion to rough or enlarged surfaces, in most cases, results in a stronger bond. The dust particles resulting from this treatment have to be blown off or simply wiped away with a lint-free cloth. The clean, treated surface must be labeled shortly after treatment and protected against recontamination, especially from fingerprints.

## Substrate Condition

All properties of the substrate must be "solid". Loose particles must be removed or bonded with a primer. It is imperative to note that the durability of the adhesion is only as good as the stability of the surface. When dealing with rough, uneven, or curved substrates, the use of labels and adhesives with a high flexibility should be considered.

## Application Temperature

The optimal temperature of both the object and its environment is  $21\pm 4$  °C ( $70 \pm 7$  °F) with a low relative humidity. The application of self-adhesive labels at temperatures lower than  $+10$  °C ( $50$  °F) must be avoided. Especially in winter, it must be ensured that the labels and label material are not stored in unheated spaces to avoid application at too low of temperatures. In addition, the development of condensation must also be avoided for example, when transporting these items from a cold storage facility to a warm production area.

## Application

The durability of an adhesion is dependent on the amount of contact the adhesive develops with the substrate. Increasing pressure during contact, for example, through the use of a coating knife or a roller increases the adhesive's contact when compared to manual application. All tools, including hands, must be clean and free from oil, dirt, and release agents. After the label is applied, the maximum adhesion strength is reached earliest after 24 hours and, in unfavorable cases, after only 72 hours, differences in temperature should be avoided during this time.

## Storage

The self-adhesive labels have to be stored in lying position at  $21\pm 4$ °C ( $70 \pm 7$ °F) and at  $50\pm 10\%$  relative humidity. Direct contact with heat or sunshine must be avoided during storage. The storage into original packing reduces the influence of high atmospheric humidity.

Storage temperatures of more than  $25$ °C ( $77$ °F) in connecting with very thick, soft adhesive can result in adhesive bleeding at the sides. This restricts processing in print and dispensing systems, above all during the summer months. The durability is at least 2 years as of production date. This is valid provided that there are no restrictions in the 'Product Specifications' of our self-adhesive materials.