



tesa HAF[®] 8410 HS



Product Information

Heat activated film for the embedding of chip-modules into smart cards

Product Description

tesa[®] HAF 8410 HS is a heat activated double-sided brown adhesive film based on reactive phenolic resin and nitrile rubber.

Application Fields

tesa[®] HAF 8410 HS is designed for the embedding of chip-modules into smart cards with high security and long life requirements.

- Suitable for PVC, ABS, PET and PC cards
- Good workability on all common implanting lines
- Outstanding ageing resistance
- Lifelong flexibility due to high rubber content

Technical Information (average values)

The values in this section should be considered representative or typical only and should not be used for specification purposes.

Product Construction

- | | | | |
|--------------------|------------------------------------|-------------------|-------|
| • Backing material | none | • Total thickness | 60 µm |
| • Type of adhesive | nitrile rubber /
phenolic resin | • Colour | amber |
| • Type of liner | glassine | | |

Properties/Performance Values

- | | | | |
|------------------------------------|----------------------|-------------------------------|----------------------|
| • Bonding strength (dynamic shear) | 12 N/mm ² | • Bonding strength (push-out) | 12 N/mm ² |
|------------------------------------|----------------------|-------------------------------|----------------------|

Additional Information

Technical Recommendations for smart card applications:

The following values are recommendations for machine parameters to start with. Please note that optimum parameters strongly depend on the type of machine, particular materials for card bodies and chip-modules as well as customer requirements.

1. Pre-lamination:

During pre-lamination, the adhesive tape is laminated onto the module belt. This step can be performed in-line or off-line. The pre-lamination step does not effect the shelf-life of the adhesive tape. Pre-laminated module belts can be stored over the same period of time as the adhesive tape.

Machine setting:

- Temperature 120 – 140 °C
- Pressure 4 – 6 bar

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- Time 1,5 – 3,0 s

2. Module Embedding:

During module embedding, the pre-laminated modules are die cut from the module belt, positioned into the card cavity and permanently bonded to the card body by heat. For this step, the exact handling depends on the type of the implanting line used. Today, two different ways are most common:

Single step process - Machine setting (low temperature):

- Temperature¹ 160 – 180 °C
- Pressure 65 N/module
- Time 2,0 – 4,0 s

Single step process - Machine setting (high temperature):

- Temperature¹ 180 – 200 °C
- Pressure 65 N/module
- Time 1,0 – 1,5 s

Multiple step process (2 or more heating stamps) - Machine setting:

- Temperature¹ 170 – 200 °C
- Pressure 65 N/module
- Time (for each step) 0,7 – 1,2 s

¹ Temperature as measured inside the heating stamp

Note: Bonding strength values were obtained under standard laboratory conditions (Mean values). Value is guaranteed clearance limit checked with each production batch (Material: Etched aluminium test specimen / Bonding conditions: Temp. = 120 °C; p = 10 bar; t = 8 min)

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