

SILRES® PSA 45559 VP

Silicone pressure-sensitive adhesive

Characteristics

SILRES® PSA 45559 VP is a solution of silicone resins and polysiloxanes in toluene. It is preferably used for the manufacture of pressure sensitive adhesive tapes.

Special characteristics

- excellent surface tack
- high flexibility even at extreme temperatures
- excellent thermal stability
- good resistance to moisture, weathering and ageing

Application

SILRES® PSA 45559 VP has been primarily designed for the manufacture of pressure-sensitive adhesive tapes. It can be used with many substrates including silicone rubber, foils or films made of polyester (Hostaphan®, Mylar®), polyamide (Nomex®), polyimide (Kapton®), PTFE (Hostaflon®, Teflon®), aluminium, copper and others.

Processing

SILRES® PSA 45559 VP is supplied as a 60 % solution in toluene. It can be diluted with toluene compatible solvents or blended with other silicone based pressure-sensitive adhesives. As diluents aliphatic, aromatic and chlorinated solvents are equally suitable, but we recommend to use aliphatic compounds (white spirit, naphtha or the like).

Product data

Property	Test method	Unit	Value
Delivery form			60 wt. % solution in toluene
Color			transparent to translucent
Density		[g/cm³]	0.98
Viscosity at 23 °C	ISO 3219	[mPa s]	60,000

These figures are only intended as a guide and should not be used in preparing specifications.

For an optimum balance of surface tack, adhesive strength and cohesive strength, it is necessary to cure SILRES® PSA 45559 VP after application. Peroxides proved useful as curing catalysts, which are added to SILRES® PSA 45559 VP in concentrations of between 0,5 and 3,0 wt. %, calculated on the silicone content, prior to application. With higher peroxide levels, the crosslinking density and cohesive strength can be increased, while adhesive strength is lowered.

Before curing the solvent must be removed. It is recommended to dry at 80 - 90 °C for 2 - 4 min. Higher temperatures can cause premature decomposition of the peroxide and incorporation of the solvent into the adhesive film, which can impair the adhesive properties of the finished tape. A tacky, uniform film is left on the substrate.

Finally the composite is cured for 2 - 5 min according to the table below. If the substrate permits higher curing temperatures, the curing time can be adapted accordingly.

catalyst	curing temperature
Dibenzoyl peroxide	170 – 200 °C
Bis-(2,4-dichlorobenzoyl) peroxide	140 – 160 °C

Adhesive properties*

Property	Test method	Unit	Value
Surface tack	"Loop test"	[N/cm]	10 - 14
Peel strength	Peeling angle < 180 ° peel speed: 300 mm/min	[N/cm]	7.2 - 10
Shear resistance	2 kg load 2.5 x 2.5 cm bonding area	[min]	> 1000 min

* Substrate: glass Strip material: polyester Drying: 2 min / 90 °C Curing: 2 min / 170 °C Bonding time: 8 min

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Storage

SILRES® PSA 45559 VP should be stored between 5 °C and 25 °C in the tightly closed original container. The 'Best use before end' date of each batch appears on the product label.

Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety information

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from Wacker subsidiaries.

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001. The Business Unit Elastomers of the Division Silicones is ISO/TS 16949 certified.

For technical, quality, or product safety questions, please contact:

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