Industry

Technical Data Sheet
Version 04/2006

SikaSense®-4300

Water-based high-performance contact adhesive system

Technical Product Data:

Chemical base	PUR dispersion in water
Colour	White
Solid content (CQ 002-0)	43% approx.
Density (CQP 006-3)	1,0 kg/l approx.
pH value (CQP 004-0)	7 - 8
Viscosity, 20°C / Brookfield RVT, Sp. 4/5 Upm	11000 mPas approx.
Curing agent	SikaCure®-4900; -4901; -4901 BL; -4909 (4902, 4902 BE, 4902 BL)[2)]
Mix ratio	4 - 5 parts by weight curing agent to 100 parts by weight dispersion
Pot life at room temperature[1)]	8 hrs. at least
Bonding process	Hot sealing or room temperature[1)] contact bonding (both faces pre-coated)
Coverage (typical value)	80 - 100 g/m², wet (depends on substrate)
Method of application	Spray gun, roller or brush
Drying conditions (flash-off conditions before fitting) (CQP 565-1)	- At room temperature[1)]: 45 mins. approx. - In drying tunnel (at max. 40 – 50°C): 10 mins. approx.
Activating temperature	At least 50°C (applies only to hot sealing)
Open time[1)] (CQP 567-1)	At least 2 hrs. after the end of flash-off time
Processing temperature for contact bonding	18 - 25°C. (Lower temperatures down to 10°C result in an extension of the drying time and in reduction of open time). Do not process this adhesive below 10°C.
Shelf life	6 months in unopened original container at the storage temperature of 5 - 30°C, SikaColl®-4300 is sensitive to frost, store above +5°C. In winter only transport in thermocontainer.

[1)] 23°C and 50% relative humidity [2)] not suitable for cold contact bonding

Description

SikaSense®-4300 is a ready to use waterborne PUR dispersion contact adhesive with high initial strength and very good resistance against plasticizers.
Both one component and two component application are possible. SikaSense®-4300 in combination with SikaCure®-4900; -4901; -4901 BL; -4909 (4902, 4902 BE, 4902 BL)[2)] is a high quality laminating adhesive with especially good resistance against heat and water. The two component adhesive is processed according to the sealing or contact bonding procedure.

SikaSense®-4300 is manufactured in accordance with the ISO 9001/14001 quality assurance system.

Product benefits

- Easy processing
- Solvent free
- Broad adhesion range on wood and plastics
- High initial strength
- Easy positioning of the parts to fit
- Very good resistance against heat and weathering
- Very high resistance against hydrolysis

Areas of application

Important uses are bonding flooring in utility vehicles, interior linings for automobiles, panels and front parts for furniture in the 3D laminating process.
Suitable substrates are wood, bare or coated metals, GRP, medium density fibreboard (MDF, manufactured of wood fibres), decorative and foamed foils, made of PVC, ABS, ASA, TPO or polyester and also foam backed textile coverings, carpets and floor covers.

In the production of utility vehicles SikaSense®-4300 is suitable for the room temperature bonding of different covering materials e.g. PVC flooring, and adjacent stairs, wheel arches, seat brackets and wall coverings.
SikaSense®-4300 delivers in combination with the curing agents SikaCure®-4900; -4901; -4901 BL; -4909 (4902, 4902 BE, 4902 BL)[2)] excellent performance as adhesive for most synthetic and natural materials and is a customized problem solver in demanding applications.

Curing mechanism

Without curing agent the curing process only takes place due to the evaporation of water. In the presence of curing agent in the hardening process of SikaSense®-4300 the first step is also drying, due to the evaporation of water. This physical process is followed by chemical crosslinking (in a polyadditional reaction) with the curing agent. At room temperature the chemical curing is completed in about 72 hours. Higher temperatures increase, lower ones decrease the speed both of the drying and the chemical reaction.

Method of application

Mixing.
The usual mix ratio of SikaSense®-4300 (resin dispersion), in combination with SikaCure (curing agent) is 100 parts by weight resin dispersion to 4 parts by weight curing agent. Slight increase of the curing agent amount to 5% results in an improved hydrolytic and heat stability.
The curing agent is metered into the continuously stirred dispersion and then mixed with a mechanical mixer to obtain a homogeneous mixture. Care should be taken to avoid air inclusion. The pot life is 8 hours at room temperature.

[2)] not suitable for cold contact bonding

Surface preparation.
The adhesion surfaces must be clean, dry and free of oils and fats. Release agents from the surface of the plastic parts must be removed with the help of suitable cleaners. To obtain wetting and good adhesion, the surface tension of plastic parts must be at least 38 mN/m.

Application.
The adhesive generally is applied with roller, brush or spray gun (HVLP-System, nozzle 1,5-1,8 mm at 0,8-2,0 bar adhesive pressure) on the substrate.
For the use in automatic application systems a suitable filter system is recommended.
Both ambient conditions as well as drying tunnel (temperature of the air should not exceed 40°C) can be used for drying. Before the open time is over the parts are, according to the hot sealing or cold contact bonding procedure, fitted together and compressed to form the bond.

Cleaning of tools.
Tap water is sufficient to clean the tools from uncured adhesive residues.
Cured adhesive can only be removed by mechanical means or suitable solvent.

Further information

Copies of the following publications are available on request:
- Processing guide for Sika Laminating Adhesives
- Material Safety Data Sheet

Packaging information

Pail	4 kg
Pail	25 kg

Important

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the actual Material Safety Data Sheet containing physical, ecological and other safety related data.

Note

For specific advice concerning preparation of the substrates or the choice of appropriate application devices, please contact our Technical Service.

Sika Schweiz AG
Tüffenwies 16
8048 Zürich
Switzerland
Tel: +41 1 436 40 40
Fax: +41 1 436 45 30

Sika Limited
Watchmead
Welwyn Garden City
Herts., AL7 1BQ, UK
Tel: +44 1707 39 44 44
Fax: +44 1707 32 91 29

Sika Corporation
30800 Stephenson Highway
Madison Heights, MI 48071
USA
Tel: +1 248 577-0020
Fax: +1 248 577-0810