

Bonding plastics

Bonding plastics is still difficult to implement for many industrial sectors. Nevertheless, it is trend-setting for our customers in the fields of automotive aerospace engineering, plastics engineering, processing industries. It makes sense to bond plastics in particular where rivets, screws or welding weaken the material composite.

Adhesive bonding is the future

It is possible to create new material combinations that have better properties than conventional materials with adhesive bonding.

Excellent material properties are achieved, e.g. insulation resistance against electrical potentials, gas and liquid sealing or protection against corrosion. Each bond requires a precise selection of the adhesive in advance, which must match your specific requirements.

These requirements consist of the mechanical, dynamical, chemical and static loads on your component. Process security and long-term durability are the focus for many of our customers.

T-E-Klebetechnik is available to advise you on this selection.

With the information following this text, you can work with us to find the right adhesive. As a result, we advise you on the correct surface treatment and the general interplay of plastics and adhesives.

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General terms and conditions of purchase are valid and can be dow

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Anwendungs-, Verfahrens- und Dosiertechnik

Basic adhesive instructions for plastics:

PA - polyamide

This plastic has high strength and a special toughness, it is one of the hard to bond materials.

 PA is preferably used in boat building, aerospace and aircraft construction.

We recommend pretreating the surfaces of this plastic.

PE - polyethylene

This plastic is characterized by high chemical resistance, good electrical insulation and good sliding behavior.

• PE is the worldwide standard plastic, it is used as bottles, pipes or as a pump part.

Thanks to its surface properties, polyethylene is one of the poorly bondable plastics.

PET - polyethylene terephthalate

This plastic is very stable due to its physical property with strong intermolecular forces.

 PET is used for gears, magnetic tapes or as a molded part for small electrical devices

PET is one of the poorly bondable plastics, we recommend that you pretreat the surfaces of this plastic with chemical processes to create a bond ability.

PTFE polytetrafluoroethylene This plastic has a low surface tension and good temperature resistance. It is also resistant to acids, bases, alcohols, petrol and oils.

 PTFE is often used in aggressive environments such as tanks, pumps or supply lines.

This material is difficult to bond. We recommend pretreating the surface to ensure the bond ability.



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PMMA - polymethyl methacrylate

This plastic is characterized by its weather and aging resistance, as well as its resistance to acids and bases of medium concentration.

• PMMA is a transparent thermoplastic, also known as acrylic or Plexiglas.

This material is one of the easy to bond materials. Surfaces must not be cleaned with alcohol or solvents.

POM - polyoxymethylene

Polyoxymethylene impresses with its high rigidity and low coefficients of friction.

• This plastic is characterized by its high dimensional stability. It is ideal as a construction material

POM and is one of the easy to bond plastics.

We recommend a surface treatment such as flaming or priming.

PC - polycarbonate

This plastic is characterized by its impact resistance, rigidity and hardness.

 PC is water-clear and has a low weight. It is therefore particularly suitable to be used as a glass alternative.

Due to its optical similarity to glass, the pretreatment must be careful so that the surface is not damaged.

Polycarbonate is sensitive to UV light and will become brittle over time without correct processing.



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PS - polystyrene

This plastic is one of the most common bulk plastics, PS is well resistant to aqueous alkalis and mineral acids. However, it is sensitive to non-polar solvents and ketones

 PS is most often used as a foamed material in facade insulation. Due to its hot water and coolant resistance, it is used as a construction material.

Polystyrene is generally easy to bond, but the choice of adhesive should be matched to the materials to be bonded and the application. Because PS is a solvent-soluble and polar plastic.

The information given here for bonding plastics is of a general nature. No legally binding assurance of specific properties or suitability for any pretreatment of your individual materials can be derived from this information. The information given here is based on our current experience and knowledge. They do not constitute instructions for action.

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