



MACROPLAST UK 8101 / MACROPLAST UK 5400

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PRODUCT DESCRIPTION

MACROPLAST UK 8101 / MACROPLAST UK 5400 provides the following product characteristics:

Technology	Polyurethane
Product Type	PU Adhesive
Cure	Polymerisation
Condition	Solvent-free
Components	Two-component
Application	General assembly
Appearance (Component A)	Beige
Appearance (Component B)	Brown
Mixing Ratio, by weight Part A: Part B	4 : 1
Mixing Ratio, by volume Part A: Part B	3.4 : 1

MACROPLAST UK 8101 / MACROPLAST UK 5400 is a solvent-free, two-component adhesive based on polyurethane.

The resin part (component A) contains organic compounds with hydroxyl groups, the hardener (component B) is based on isocyanates. By mixing both components in a weight ratio of 4 : 1, a hard elastic two-component adhesive is formed through chemical reaction. After curing the product exhibits no measurable change in volume.

Application Areas

MACROPLAST UK 8101 / MACROPLAST UK 5400 is used as an adhesive or as a filling, potting, coating and casting product.

The product adheres well to metals, wood, plastics and rigid foams.

Main application areas are the bonding of PUR rigid foam and styrofoam to wood, sheet, metal, aluminium sheets or GR-UP when manufacturing vehicle side panels/build-ups, partition walls and other sandwich elements.

TECHNICAL DATA

Component A

Resin UK 8101:

Consistency:	liquid
Density, g/cm ³	1.4 to 1.5
Viscosity at 20°C, mPas Brookfield RVT Henkel method 10	6,000 to 10,000

Component B

Hardener UK 5400:

Consistency:	thin liquid
Density, g/cm ³	1.17 to 1.27
Viscosity at 20°C, mPas Brookfield RVT Henkel method 10	150 to 350

Mixture (Component A + B):

Consistency:	liquid
Viscosity at 25°C, mPas Brookfield RVT Henkel method 11	2,500 to 2,800
Pot life (120g, 20 °C), min Henkel method 20	50 to 70
Open Time, minutes Henkel method 30	120 to 150
Initial setting time (23 °C), hrs	5 to 8
Final setting time (23°C), days	5 to 7
Consumption, g/m ²	200 to 400
Tensile shear strength, MPa * EN 1465, Henkel method 40	> 6
Peel strength (A/AI sheets), N/cm DIN 53 282	30 to 40
In service temperature, °C	-40 to 80
Short exposure (up to 1 h), °C	150

DIRECTIONS FOR USE

Preliminary Statement:

Prior to application it is necessary to read the **Material Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed.

Pretreatment:

The substrate should be clean, dry, free of dust, oil, grease and other contaminants. The usage of suitable primers on metal surfaces can improve the adhesion and / or the long-term bond stability. The surface of plastic materials should be cleaned, so as to remove any kind of release agents present on the substrate surface. An improvement of the adhesion can be achieved by grinding or sandblasting the surface. Nonetheless, even coating with primer and washing up with solvents (isopropanol, ethanol or acetone) are suitable as pretreatment; polystyrene parts without pretreatment cannot be bonded with MACROPLAST UK 8101 / MACROPLAST UK 5400.

Application:

Adhesive components can be mixed manually, with stirring application or two-component mixing equipment. The adhesive is only to be used within a limited time (pot life). After this time the mixture gels up and is not suitable for use. Therefore only the amount that can be applied within the time of pot life should be mixed. The pot life depends on the quantity and temperature of the mixed batch. With larger quantities and an increase in temperature, the pot life

decreases. Lower temperatures extend the pot life. Adhesive components should not come into contact with moisture during storage or application. Contact with moisture (water vapour) generates foaming of the adhesive and weakens the bondline. Therefore all packaging should be sealed properly and protected against humidity during storage.

Curing:

MACROPLAST UK 8101 / MACROPLAST UK 5400 can be cured between 15°C and elevated temperatures (up to 60 °C). The curing time will be reduced substantially with increasing temperatures. The addition of chemical catalysts (accelerators) also speeds up the curing reaction (i.e. pot life, open time). While curing there should be adequate contact pressure (load pile, presses, clamps) and fixtures to hold the joint in place. An adhesive squeeze out along the bond line is a good indication of sufficient adhesive in the joints.

Cleaning:

Fresh, uncured material (cleaning application equipment, substrate contamination etc.) can be removed with Macroplast B 8030; cured adhesive can only be removed mechanically.

TYPICAL TEST RESULTS

Tensile Shear Strength (in MPa) as function of the curing time at 20 °C:

Time (days)	TSS
1	5
2	6
4	7
7	8

Tensile Shear Strength (in MPa) as function of the curing time at elevated temperatures (Measured at 20 °C):

Curing temp.	0.5 hrs	1 hrs	2 hrs	3 hrs	7 hrs
80°C	6	7	8	9	11
100°C	7	8	10	11	13
120°C	10	12	13	14	14

Tensile Shear Strength (in MPa) at different temperatures (after 12 days at ambient temperature):

Temperature	TSS
-40°C	24
-20°C	24
0°C	20
20°C	8
40°C	4
60°C	2.5
80°C	1.5

Classification:

Please refer to the corresponding **safety data sheets** for details on:

- Hazardous Information**
- Transport Regulations**
- Safety Regulations**

ADDITIONAL INFORMATION

Disclaimer:

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials used as well as to varying working conditions beyond our control we strictly recommend to carry out intensive trials to test the suitability of our products with regard to the required processes and applications. We do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases where we are liable of gross negligence or false intention.

This datasheet replaces all former versions.

Reference 0.0

