MACROPLAST UK 8103 / MACROPLAST UK 5400

04 September 2009

PRODUCT DESCRIPTION

MACROPLAST UK 8103 / MACROPLAST UK 5400 provides the following product characteristics:

Technology	Polyurethane
Product Type	PU Adhesive
Cure	Polymerisation
Condition	Solvent-free
Components	Two component
Application	Assembly, Construction
Appearance (Component A)	Cream
Appearance (Component B)	Brown

MACROPLAST UK 8103 / 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 5 : 1, a hard elastic product is formed through chemical reaction. After curing the product exhibits no measurable change in volume.

As natural raw materials (from different cultivation areas) are used a variation in color between different batches is possible.

Application Areas

MACROPLAST UK 8103 / MACROPLAST UK 5400 is used for the adhesion of pretreated metals, synthetic materials, wood and rigid foams.

The main application is the production of sandwich elements, e.g. for vehicles, containers, building industry and technical insulations. Furthermore this product is used as a potting, filling and coating compound.

TECHNICAL DATA

Component A:

Consistency	liquid
Density, g/cm³	1.6 to 1.7
Viscosity, Brookfield - RVT, 20°C, mPa.s * M-10	24,000 to 30,000

Component B:

Consistency	liquid
Density, g/cm³	1.17 to 1.27
Viscosity, Brookfield - RVT, 20°C, mPa.s * M-10	150 to 350

Mixture (Component A + B):

Consistency	liquid
Viscosity, Brookfield - RVT, 25°C, mPa.s * M-11	8,000 to 10,000
Mix Ratio (By Weight)	5 : 1
Mix Ratio (By Volume)	3,7 : 1
Potlife (120g, 20°C), min *	40 to 70
M-20	
Initial setting time (23 °C), hrs	5 to 8
Final setting time (23°C), days	5 to 7
Consumption, g/m²	200-400 (dep. on substrate)
Tensile shear strength, MPa * EN 1465 / M-40	> 9
Service Temperature, °C	-40 to 80
Short exposure (up to 1 h), °C	150

All technical data based on Henkel test method.
Data with * is specified.

Tensile Shear Strength:

(in MPa) as function of the curing time at 20°C

Time	1 day	2 days	5 days	7 days	12 days
TSS	7.0	9.5	11.5	12.5	14.0

Tensile Shear Strength:

(in MPa) as function of curing time at elevated temperatures (measured at at 20°C)

Curing temp.	0.5 hrs	1 hrs	2 hrs	3 hrs	7 hrs
80°C	3.5	8.0	10.0	10.5	11.0
100°C	6.0	9.5	10.0	12.5	13.5
120°C	9.0	10.0	12.0	13.5	16.0

Tensile Shear Strength:

(in MPa) at different temperatures (after 12 days at ambient temperature)

Temp.	-40°C	-20°C	0°C	20°C	40°C	60°C	80°C	100°C
TSS	24.0	24.0	20.0	14.0	9.0	6.0	4.5	2.5

Tensile shear strength based on DIN EN 1465, measured on Al/Al

Certificates and Approvals

Test certificates of 'Brandversuchshaus, Hamburg', D-22767 Hamburg, for low flammability in ship building according to IMO Resolution FTPC part 5.

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.

Mixing and applying:
Adhesive components can be mixed manually, with stirring application or two-component mixing equipment. The product may be applied by spatula, wheel, pouring or spraying. The adhesive is only to be used within a limited time (potlife). After this time the mixture gels up and is no longer suitable for use. Therefore only the amount that can be applied within the time of potlife should be mixed. The potlife depends on the quantity and the temperature of the mixed batch. With larger quantities and an increase in temperature, the potlife decreases. Lower temperatures extend the potlife. Adhesive components should not come into contact with moisture during storage or application. Contact with moisture (water vapor) generates foaming of the adhesive and weakens the bondline. Therefore all packaging should be sealed properly and protected against humidity.

Curing:
MACROPLAST UK 8103 / MACROPLAST UK 5400 can be cured between 15°C and elevated temperatures (up to 60°C). The curing time will be reduced substantually with increasing temperatures. The addition of chemical catalysts (accelerators) also speeds up the curing reaction (i.e. potlife, open time). While curing there should be adequate contact pressure (load pile, presses, clamps) and fixtures to hold the joint in place. When the adhesive squeezes out along the bond line, it is a good indication of sufficient material in the joints.

Cleaning:
Fresh, uncured material (cleaning application equipment, substrate contamination etc.) can be removed with Macroplast B 8040. The cured adhesive can only be removed mechanically.

Classification:
Please refer to the corresponding **safety data sheets** for details on:
Hazardous Information
Transport Regulations
Safety Regulations

Storage:
Store MACROPLAST UK 8103 / MACROPLAST UK 5400 in well sealed, unopened containers at temperatures between 15 and 25°C. Component B is frost-sensitive and must not be stored at temperatures < 10°C or > 50°C. The shelf life of both components is 12 months from the date of production.

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

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