MACROPLAST UK 8160 / MACROPLAST UK 5400

08 April 2010

PRODUCT DESCRIPTION

MACROPLAST UK 8160 / 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
Mixing Ratio, by weight Part A: Part B	5 : 1
Mixing Ratio, by volume Part A: Part B	4.2 : 1

MACROPLAST UK 8160 / 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 8160 / MACROPLAST UK 5400 is used for the elastic, bend-resistant bonding of pretreated metals, wood and plastics with rigid foams.

The main application is the production of sandwich elements, e.g. for vehicles, containers, the construction and shipbuilding industry, tanks and tankers as well as for engineered insulations down to -190°C.

MACROPLAST UK 8160 / MACROPLAST UK 5400 also displays advantages in the repair of composite elements (level out).

TECHNICAL DATA

Component A:

Consistency:	pasty
Density, g/cm³	1.4 to 1.5
Viscosity, Brookfield - RVT, 20°C, mPa.s * Henkel method 10	pasty

Component B:

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

Mixture (Component A + B):

Consistency:	pasty
Pot life (120g, 20°C), min * Henkel method 21	60 to 90
Initial setting time (23 °C), hrs	5 to 8
Final setting time (23°C), days	5 to 7
Consumption, g/m²	200 to 500 (depending on substrate)
Tensile shear strength, MPa * EN 1465 , Henkel method 40	> 7
Service Temperature, °C	-190 to 80
Short exposure (up to 1 h), °C	120

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 (days)	TSS
1	6.0
2	8.5
5	10.5
7	11

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.

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Application:
Adhesive components can be mixed manually, with stirring application or two-component mixing equipment. The product may be applied by spatula. 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 8160 / 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 sufficent adhesive 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:
When properly stored in a cool, dry location, with the container tightly closed when not in use, this product will have a shelf life of at least 12 months.

Optimal Storage: 15°C to 25°C. Storage below 10°C or greater than 50°C can adversely affect product properties.
Component B is frost-sensitive.

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 0.1

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