service chimie

: 5, place de l'Église
77400 Saint Thibault des Vignes
: 33.01.64.30.89.22 • : 33.01.64.30.87.49
: CentreTech@Service-Chimie.fr

Fiche technique

DUPONT

BETAMATE™ 2090

Structural Adhesives

BETAMATE™ 2090 is a two component glass beads containing epoxy based adhesive especially developed for applications on which a high glass transition temperature and a quick curing also at temperatures below 25°C is required. The adhesive is used in the car to increase the operation durability, the crash performance and the body stiffness.

BETAMATE™ 2090 has excellent adhesion to automotive steels (including coated or organic coated steels) and pretreated aluminum. BETAMATE™ 2090 helps to increase the stiffness and the crash stability of the entire car body with high durability of the adhesive and adhesive bond. The adhesive provides corrosion protection of the metal and weld points due to its sealing capability. It is compatible with other mechanical and thermal joining techniques and is compatible with the e-coat process.
BETAMATE™ 2090 has a high glass transition temperature and is fast curing. Hand free in approx two hours.

Component A

Color	Blue	
Density	1.29	g/cm³
Viscosity, Casson, Component A	60	Pa.s

Component B

Color	White	
Density	1.07	g/cm³
Viscosity, Casson, Component B	30	Pa.s

Product information

Basis	Epoxy resin / polymeric amines

Typical mechanical properties

Tensile Modulus	2000	MPa	ISO 527-1/-2
Stress at break	30	MPa	ISO 527-1/-2
Strain at break	5	%	ISO 527-1/-2
Lap shear strength, 7 days	≥17	MPa	DIN EN 1465
Peel strength, T-Peel	4.8[2]	N/mm	ISO 11339
Peel strength, Impact-Peel	15[3]	N/mm	ISO 11343

[1]: CRS 1403 1.5mm; Adhesive layer thickness 0.2mm; Bonded area 25x10mm

[2]: DX56 D Z100 MB 0.78 mm; ; Adhesive layer thickness 0.2mm 0.2mm; Bonded area 25x100mm

[3]: CRS 1403 1.0 mm; 2m/s; Adhesives layer 0.2mm 0.2mm; Bonded 20x30mm

Thermal properties

Glass transition temperature, 18°F/min	90	°C	ISO 11357-1/-3

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Storage and stability

Shelf life	360[4] days

[4]: storage temperature <30°C

Characteristics

Compatibility	Glass, Metals

Additional information

Adhesives

Application

All Dupont T&I Adhesives products are primarily developed in co-operation with the automobile manufacturers, according to their needs and their specifications, they are approved for the specific applications as defined by the customer. The use of the product other than approved application should be released in written form by the Technical Service of DuPont T&I Adhesives.

Surface Preparation

Oily surfaces should be cleaned before applying the adhesive

Application Equipment

Single cartridge (two-in-one cartridge): Application with a standard 1-component hand-operated or pneumatic gun with piston bar (no direct air guns!). 1-component battery guns may be used, if they are equipped with adjustable feed.
Drums and Pails: With a standard drum or pail pumps and a two-component dosing system

Application Notes

• For the Aftermarket (curing temp <=60°C) it is recommended to clean the surface with Betaclean™ 3350 before the application. On oily surfaces lower mechanical properties might be achieved.
• If applied out of cartridges it is necessary to equalize the filling levels.
• For the best performance it is recommended to reject the first few grams of mixed adhesive.
• During the storage time a crystallization of the resin may occur. By heating the adhesive to 40 - 50 °C for about 15 to 30 minutes this physical process is reversible. All properties stay on the same level.
• Before the application the material temperature of both the resin and the hardener should be at min. 15°C.

Application Parameter

The product is cold pumpable and applicable as bead. Mixing ratio 2:1, statically

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or dynamic mixing). It can be applied with the following parameters:

Application speed: up to 300mm/s
Temperature follower plate: unheated
Temperature follower plate to doser: unheated, max temperature at doser 35°C
Temperature nozzle: unheated

For an optimum tack of the adhesive, the parts to bond should be stored at 15°C or higher. In case of an application break longer than 10 minutes the mixer should be changed.

Curing Conditions

Standard curing: 7 days at ambient temperature
Handling strength: after approx. 2 h at ambient temperature
After 1 days at Ambient temperature a strength of 90% of the final value is reached
Curing temperatures up to 180°C are possible

Cleaning

Uncured material can be removed with BETACLEAN 3510. Attention: The contact with bonded areas should be avoided.

Delivery Form

Drums, Pails on request, Cartridge Sets (Two-in-One cartridges with 195ml; usable volume 180ml)