

OPTIMAX[®]

High Performance Manufacturing Adhesives & Sealants

Technical Data Sheet

Revision number 090914

Product	Optimax[®] 8085-B-SL-FR Two-Component Polyurethane
Description	Optimax [®] 8085-B-SL-FR is a two component, room temperature curing, black, odourless, self levelling, flame retardant polyurethane specially designed for a wide range potting and encapsulation applications.
Application	Optimax [®] 8085-B-SL-FR is available in a twin cartridges or in different size drums. A static mixer with a minimum of 16 elements should be used.
Advantages	Flame retardant Self levelling Low viscosity Low stress

Physical properties

Properties	Component A	Component B	Mixed
Chemical base	Polyol	MDI	Polyurethane
Cure mechanism	-	-	Polyaddition
Mixing ratio by volume	1,00	1,00	-
Mixing ratio by weight	0,89	1,00	-
Colour	Black	Straw	Black
Appearance	Liquid	Liquid	Liquid
Viscosity mPas	2500-3000	100-300	1500-2000
Relative density	1,14	1,20	1,17
Application temperature	+10 / +30 °C	+10 / +30 °C	-
Working time	-	-	15 mins.
Casting time	-	-	60 mins.
Fully cured time	-	-	720 mins.
Temperature of exothermic reaction °C	-	-	30
Shore hardness	-	-	85 A
Elongation %	-	-	190
Service temperature °C	-	-	-40 - +90
Shelf life months	12	12	12

Average Lap Shear Strength N/mm²

Tests were conducted at 20°C on various substrates after bonding for 48 hours at 20°C.

Wood	8
Glass	6
Marble	8
Concrete	8
Brass	4

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product and safety information
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Copper	4
Steel	6
Aluminium	5

Tests were conducted at 20°C on plastic to plastic joints after bonding for 48 hours at 20°C. Abrading and degreasing pre-treatment was carried out with iso-propanol.

PVC	7
EPDM	2
Polyamide	7
PMMA	3
Polypropylene	2
ABS	5
Polycarbonate	7
SMC	7

Average Lap-Shear strength vs ageing to chemicals agents N/mm²

Tests were conducted at 20°C after immersion for 30, 60 and 90 days at 20°C on steel to steel joints which had been bonded for 48 hours at 20°C.

Days	30	60	90
As-produced value	8	8	8
Water at 60°C	7	6	5
Paraffin	8	8	8
Motor Oil	8	8	8
Xylene	6	4	2
Methyl ethyl ketone	Destroyed		
Acetic Acid	6	4	2
Isopropanol	7	6	5
Ethyl Acetate	Destroyed		
Petrol	6	4	2
IMS	Destroyed		

Average Lap-Shear strength vs thermal ageing N/mm²

Tests were conducted at 20°C on steel to steel joints which had been aged at 60°C. Following the three thermo cycles of 24 hours ranging from -40°C to 100°C, no variation appeared in the average lap shear strength. Sanding and degreasing pre-treatment was carried out with acetone.

As-produced value	8
30 days at 60°C	7.5
60 days at 60°C	7
90 days at 60°C	6.5

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Processing	<p>The strength and durability of potted components are dependent on proper pre-treatment of the surfaces. Surfaces should be cleaned with a degreasing agent in order to remove all traces of dust, dirt, oil and grease.</p> <p>Pre-treatment of thermoplastic materials such as PVC, polycarbonate, polypropylene, PMMA, etc., can be made using a mixture of light ethers or with iso-propanol. Use of strong solvents is not recommended due to the risk of damage to the plastic surface. Pre-treatment of other surfaces can be made using acetone or trichloroethylene. Petrol or other solvents should never be used. Where possible, carry out a mechanical abrading to remove paint from the surfaces (where necessary), this will also increase physical strength properties. Allow the pre-treated area to dry before applying the adhesive.</p>
Reaction	<p>The speed of cure is mainly influenced by two factors: the application temperature and the pot depth. As the reaction is exothermic, speed decreases as pot depth increases and ambient temperature decreases. Materials with a high coefficient of thermal conductivity will tend to slow down the reaction. The maximum reaction temperature is reached with a 5mm depth and is always below 50°C.</p>
Storage	<p>Shelf life of 12 months from the initial production when stored in a cool and dry place, between +10°C and 25°C. Product expiry date is indicated on the label.</p>
Notes	<p>The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Novachem Ltd. and its agents cannot assume liability or responsibility for results obtained in the use of its product by persons whose methods are outside or beyond our control. It is the user's responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the user's responsibility to observe and adapt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.</p>