

3M Automotive Engineered Attachment Systems

Technical Data Sheet

Adhesion Promoter K520

General Information

K520 is a type of adhesion promoting primer which provides a superior adhesion after coating and drying. It can be used in conjunction with 3M double-coated tapes, especially Acrylic Foam Tape, for adhering to Polypropylene (PP) and Ethylene Propylene Diene Monomer (EPDM) etc.. It shows a superior initial adhesion strength, especially in winter compared to the K500 primer.

Configuration

* Appearance	: Transparent yellow liquid
* Solid material	: Synthetic resin
* Solvent material	: Toluene, Isopropyl alcohol
* Unvolatilized material	: Approximately 3 %

Test results 1 : #4211 180° Peeling strength (N/25mm (kgf/25mm))

Substrates	PP		EPDM	
	K520	None	K520	None
Initial state	34.1 (3.5)	4.9 (0.5)	39.2 (4.0)	2.0 (0.2)
Normal state	43.1 (4.4)	7.8 (0.8)	43.1 (4.4)	4.9 (0.5)
At high temperature	21.6 (2.2)	1.0 (0.1)	20.6 (2.1)	0.2 (0.02)
Heat aging	48.0 (4.9)	7.8 (0.8)	42.1 (4.3)	2.0 (0.2)
Warm water immersion	41.2 (4.2)	10.8 (1.1)	41.2 (4.2)	2.0 (0.2)

Test materials and methods

- (1) Tape : #4211 Acrylic foam tape (1.2mm thickness)
- (2) Primer : K520
- (3) Substrates : A) Polypropylene (PP) plate for a bumper part, B) EPDM plate
- (4) Test methods :
 - a) Initial state : 23 x 20 minutes
 - b) Normal state : 23 x 24 hours
 - c) At high temperature : b) at 80
 - d) Heat aging : b) 80 x 336 hours b)
 - e) Warm water immersion : b) 40 water x 336 hours b)

* Tape size : 25mm width, * Rolling pressure : 5kg roller one-way, * Peeling speed : 50 mm/minute

Usage Attachment of auto parts which needs high adhesion to PP or EPDM rubber, etc.

Test results 2 : 90 ° Peeling strength to PP at 5 ((N/25mm) kgf/25mm))

		K520	K500
90 ° peeling strength	Immediately (1 minute)	41.2 (4.2)	5.9 (0.6)
	Initial state (20 minutes)	41.2 (4.2)	11.8 (1.2)

- (1) Tape : #4211 Acrylic foam tape (1.2mm thickness)
- (2) Substrates : Polypropylene (PP) plate for a bumper part Primer
- (3) Peeling speed : 300 mm/minute

Test results 3 : Primer drying time and 180 ° Peeling strength ((N/25mm) kgf/25mm))

Primer		K520		K500	
Drying time		Initial state	Normal state	Initial state	Normal state
1 minute	RT	43.1 (4.4)	43.1 (4.4)	25.5 (2.6)	43.1 (4.4)
3 hours	RT	43.1 (4.4)	43.1 (4.4)	43.1 (4.4)	43.1 (4.4)
	HC	43.1 (4.4)	43.1 (4.4)	34.3 (3.5)	43.1 (4.4)
24 hours	RT	43.1 (4.4)	43.1 (4.4)	43.1 (4.4)	43.1 (4.4)
	HC	43.1 (4.4)	43.1 (4.4)	30.4 (3.1)	39.2 (4.0)
3 days	RT	43.1 (4.4)	43.1 (4.4)	30.4 (3.1)	41.2 (4.2)
	HC	43.1 (4.4)	43.1 (4.4)	26.5 (2.7)	34.3 (3.5)
7 days	RT	43.1 (4.4)	43.1 (4.4)	24.5 (2.5)	37.2 (3.8)
	HC	43.1 (4.4)	43.1 (4.4)	22.5 (2.3)	28.4 (2.9)

- (1) Tape : #4211 Acrylic foam tape (1.2mm thickness)
- (2) Substrates : Polypropylene (PP) plate for a bumper part Primer
- (3) Peeling speed : 50 mm/minute
- (4) Drying condition : (A) RT : Room Temperature (23 °C , 65% Relative Humidity)
(B) HC : Humidity Condition (50 °C , 95% Relative Humidity)

Primer application procedures

- (1) Surface treatment : The primer coated surface is first cleaned with an appropriate solvent (Isopropyl alcohol (IPA) or toluene etc.), thus removing contamination or releasing agent, etc. from the surface.
- (2) Primer coating : Coat the primer uniformly to the part surface with a clean felt or brush, etc.. The amount of primer coating varies depending on the material and surface condition.
- (3) Drying time : In general, the drying time under standard conditions (23 °C and 65% relative humidity) is 30 seconds to 24 hours. Drying time varies depending on the ambient temperature and humidity, as well as the amount of coating. Recommended drying time is 3 minutes to 3 hours under standard conditions.
- (4) Tape attachment : Apply the double-coated tape to the primer coated surface and be sure to apply sufficient

pressure with a roller or hand pressure. The tape cannot be re-applied.

Notices

- (1) Please use the primer within one day after decanted to a small container.
- (2) Please apply the primer in a well -ventilated area.
- (3) After opening, please store the primer in a tightly sealed container in a well ventilated area.
- (4) This product is volatile. It may be harmful and poisonous if inhaled or it comes in contact with the skin. To prevent accidents, please follow the handling procedures/precautions attached with the primer.

WARNING !

- * Highly flammable.
- * Harmful by inhalation.
- * Irritating to eyes and skin.
- * May be harmful if swallowed.