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Technical Data Sheet

KA 005-1

Two-component Room Temperature Curing Adhesive

Bonding with PA, PP, PE, TPO Plastics Material Acrylic Adhesive

Product Description

KA005-1 is a two-component acrylic-based adhesive which cure at room temperature. No special surface treatment is required. Cured product exhibits excellent adhesion strength to many low surface energy materials, such as polyamide(PA), polypropylene (PP), polyethylene (PE), and thermoplastic polyolefin (TPO). This product can replace screws, rivets, plastic welding and two-step process, including of chemical etchants, primers or surface treatments in many applications.

Features

1. This product after mixing exhibits excellent handling property.
2. This product can bond with different substrates.
3. This product professionally solves the problem of structurally bond with thermoplastic polyolefin.
4. This product makes difficult bonding material work without any surface pretreatment procedures.
5. This product is no solvent formula, low odor which meets environmental protection requirements.
6. This product exhibits excellent thermal stability.
7. This product exhibits excellent chemical resistance and water resistance.
8. This product complies to the 2011/65/EU RoHS regulations.
9. This product complies to chlorine < 900ppm, bromine < 900ppm, chlorine + bromine < 1500ppm.

Typical Uncured Properties

	KA005-1A	KA005-1B
Appearance	Liquid	Liquid
Color	Black	Light yellow or opaque
Viscosity 25°C, S14 100rpm, cps	1,000~4,000	10,000~15,000
Thixotropic Index	3.5~4.5	3.5~4.5
Specific Gravity	1.15~1.31	1.02~1.12

Typical Curing Properties

Mix Rate (A：B) by Weight	9.2：1
Mix Rate (A：B) by Volume	10：1
Work Life, 25~33°C, 0.5g, min	8~10
Initial Cure Time, 25~33°C, hr	3~4
Through Cure Time, 25~33°C, hr	18~24

Direction of Use

1. When using this product, discard the front end of the A part and B part mixed adhesive, then coating the product (A part and B part mixed adhesive) on the substrate to achieve the best bonding performance.
2. It should be applied to a clean surface which is free of dirt, grease or mold release. In many cases, a simple solvent wipe is sufficient.
3. Mix thoroughly by weight 9.2：1 before use.
4. After mixing, it should be used within the pot life.
5. For maximum bonding strength apply adhesive evenly to both surfaces to be jointed.
6. The handling information of this product supplied in dual syringe cartridge can be obtained by requesting a copy of “Introduction for Adhesive Cartridge Dispenser”, F-06122201.

Typical Cured Properties*1

Glass Transition Temp.,(MDSC), °C	68
CTE*2 (<Tg), μm/m/℃	123
CTE*2 (>Tg), μm/m/℃	176
Specific Gravity	1.29
Durometer Hardness, Shore D	60
Shear Strength, PP+PP, kgf/cm^2	50
Shear Strength, PA+PA, kgf/cm^2	46
Shear Strength, PP+PA, kgf/cm^2	47
Shear Strength, PA +Glass, kgf/cm^2	70
Shear Strength, HDPE+HDPE, kgf/cm^2	60
Shear Strength, HDPE+HDPE, 70°C *168hr, kgf/cm^2	60
Shear Strength, HDPE+HDPE, 70°C Water * 168hr, kgf/cm^2	55
Shear Strength, HDPE+HDPE, 5% Saline *168hr, kgf/cm^2	55
Shear Strength, HDPE+HDPE, 70°C * 5% Saline *168hr, kgf/cm^2	57
Shear Strength, HDPE+HDPE, 10% Sodium hydroxide *168hr, kgf/cm^2	60
Shear Strength, HDPE+HDPE, Gasoline *168hr, kgf/cm^2	19
Shear Strength, HDPE+HDPE, Diesel fuel *168hr, kgf/cm^2	58
Shear Strength, HDPE+HDPE, Toluene *168hr, kgf/cm^2	2.3
Shear Strength, HDPE+HDPE, Acetone *168hr, kgf/cm^2	6.4
Low temperature bonding strength HDPE+HDPE, -30 °C, kgf/cm^2	47
Room temperature bonding strength HDPE+HDPE,25 °C, kgf/cm^2	63
High temperature bonding strength HDPE+HDPE, 50 °C, kgf/cm^2	42
High temperature bonding strength HDPE+HDPE, 70 °C, kgf/cm^2	30
High temperature bonding strength HDPE+HDPE, 85 °C, kgf/cm^2	18
Shear Strength, PE+PE, kgf/cm^2	51
Shear Strength, UHMW PE+UHMW PE, kgf/cm^2	34
Shear Strength LDPE+LDPE, kgf/cm^2	25
Shear Strength, ABS+ABS, kgf/cm^2	121
Shear Strength, PC+PC, kgf/cm^2	123
Shear Strength, PMMA+PMMA, kgf/cm^2	102
Shear Strength, PVC+PVC, kgf/cm^2	140
Shear Strength, FRP+FRP, kgf/cm^2	164
Shear Strength, PTFE+PTFE, kgf/cm^2	16
Shear Strength, PS+PS, kgf/cm^2	52
Shear Strength, Glass+Glass, kgf/cm^2	62
Shear Strength, SUS304+SUS304, kgf/cm^2	156
Shear Strength, TPO+TPO, kgf/cm^2	51

Typical Cured Properties*

Peel Strength, kgf	16
Weight Loss Ratio@100°C, %	<0.5
Weight Loss Ratio@150°C, %	<0.5
Weight Loss Ratio@200°C, %	1.3
Weight Loss Ratio@250°C, %	3.5
Weight Loss Ratio@300°C, %	8.9
Degradation Temp. 5wt% (TGA 10 °C /min), °C	240
Thermal Conductivity, W/mK	0.26
Thermal Resistance, m²K/W	0.006
Volume Resistivity, ohm-cm	$4.4*10^{13}$
Surface Resistivity, ohm	$4.3*10^{12}$
Dielectric Constant/ Dielectric loss, 100Hz	4.5/0.03
Dielectric Constant/ Dielectric loss, 10KHz	4.4/0.02
Dielectric Constant/ Dielectric loss, 1MHz	4.3/0.02
Dielectric Strength, KV/mm	17
Temperature Range, °C	-40~100

*1 Specimen Cure Condition：Room temperature(25~33 °C)
*2 CTE: Coefficient of Thermal Expansion

Storage and Shelf Life

This product should be kept without any possibility of light exposure. Replace the lid immediately after use. Please keep the bottle mouth clean and avoid any contact with acid-base asubstance after opened. Shelf life of this product is 1 year when stored in dark place below 2~13 °C in original, unopened containers.

Caution

Some findings indicate a lack of potential for carcinogenicity with the compositions of this product by long term recurrent application to the skin. However, contact with skin is likely to produce mild transient reddening. It is important to remove adhesive from skin with soap and water thoroughly. DO NOT use solvents for cleaning hands. This product is of moderate acute toxicity by swallowing. If swallowed, call a physician. Avoid contact with eyes. In case of contact, flush with water for at least 15 minutes and get medical attention immediately. For specific information on this product, consult the Material Safety Data Sheet.