KIWO TECHNICAL DATA SHEET

KIWOPRINT D159

1. DESCRIPTION

Water based acrylic pressure sensitive adhesive dispersion

KIWOPRINT D159 is a high performance screenprintable adhesive for instrument panels, touch panels, or appliques in the automotive/ electronic industries where permanent adhesion and high peel strength are required. KIWOPRINT D159 has very high temperature resistance (-25°F **to 355°F**/ -3C **to 180°C**) in addition to excellent aging and UV resistance.

2. ADHESIVE PERFORMANCE

Data from adhesive screenprinted on 50μ film

THREAD/cm THREAD/in	21-140 T/cm 53T/in	36-90T/cm 92T/in
THEORETICAL COVERAGE	70g/m 522 sq ft/gal	40g/m 873 sq ft/gal
DRY FILM THICKNESS *1	Approx. 45μ	Approx. 25μ
TAC VALUE *2	Approx. 1200g	Approx. 1000g
PEEL VALUE (15Min)*3	7 N/cm 4 lbs/in	4.2 N/in 2.4 lbs/in
PEEL VALUE (72 Hr)*3	12.5N/in 7.2 lbs/in	6.2N/in 3.5 lbs/in

*1 Difference measurement per DIN 50981, measured with Permascope M11 thickness guage by Helmut Fischer GmbH & Co.*2 Measured with Polyken Tack Tester, 1 sec. adhering, pull-off speed: 1 cm/sec.*3Peel strength per PSTC 1, measured in N/cm. on Lloyd type L500 with load cell 100N, Class 1, DIN 51221 for tension & compression. Peel speed: 300mm/in. Bonded to polished stainless steel (raw material 1.4301) with hand roller as per PSTC standard: roller weight 10 lbs, 5 times each direction. Bonding area 1 x 4 inches.

3. STATIC SHEAR

5,000 minutes Adhesive deposit 90μ wet, @68°F / 20°C, printed on polyester; applied to polished stainless steel; 1 in2 overlap, 2.24 lb/ 1 kg weight; measured on ETS Shear tester: Mark 6 per FINAT #8

4. SUBSTRATES

The good wetting properties of this adhesive enable its use on difficult substrates like polyethylene, polypropylene or polyamide in addition to metal, glass, polyester, polycarbonate and other industrial plastics.

It is important to test all substrates for their suitability. (i.e. plasticiaers in soft PVC may soften the adhesive resulting in reduced adhesion.)

5. MESH SELECTION

Use: *46T - 76T threads/in* or 18T - 31T threads/cm

6. STENCIL SELECTION

Water-resistant direct emulsions must be used such as KIWOCOL POLY-PLUS SRX, HWR, or KIWOCOL 221.

6. REDUCING

KIWOPRINT D159 is ready to use; reducing is not recommended. Reducing the adhesive can cause foaming, which can negatively influence printing characteristics and peel strength.

7. ADHESIVE PIGMENTS

The adhesive can be pigmented with 1-3% KIWOLID D COLOR PASTE. (KIWOLID D COLOR PASTE available by special order.)

8. APPLICATION METHOD

Screenprinting, knife coating, brush. Roll coatable version available by special order. When screenprinting use a meduim, 60-70 shore squeegee.

9. DRYING

By room temperature or conventional IR dryers. Drying time depends on type and quantity of adhesive, substrate, drying temperature, humididty, and air movement.

The following figures are only a guide. Your drying environment may yield different values. (Continued).

MESH COUNT	21-140 T/cm 53T/in	36-90T/cm 92T/in
Drying at 20°C / 68°F	45 min.	25 min.
Drying at 70°C / 158°F	7 min.	3.5 min.

DRYING Cont.
Only properly dried adhesive films give proper performance and high peel values. All water must be evaporated before applying liner or any further processing.

10. CLEANING

Wet: Warm, soapy water
Dry: Pregan 1014E

11. DIE CUTTING

To avoid problems during die-cutting, die line should be at a distance of 0.5 - 1mm from the adhesive layer.

12. BACKLIT PARTS

Backlit windows should not be covered with adhesive as this would change the light intensity.

13. PHYSICAL PROPERTIES

BASE:	Aqueous dispersion of acrylic polymers
COLOR:	Wet: white Dried: transparent
TEMPERATURE RESISTANCE:	-22°F to 355°F -30°C to 180°C
VISCOSITY:	Approx. 20,000 mPas Rheomat STV, System DII, 20°C
SOLIDS CONTENT:	Approx. 64%
DENSITY:	Approx. 1.013 g/ccm
pH:	Approx. 4.5 +/- 0.3
VOC:	NA
FLASH POINT	NA

PRECAUTIONS/
ENVIRONMENTAL IMPACT: Please see the MSDS

STORAGE:
1 year at 68°F/ 20°C in properly closed container. Protect from freezing. Kiwoprint D159 should not be in direct contact with unprotected metal.

14. PACKAGING

1 kg	=Approx. 1 qt
5 kg	=Approx. 1.25 Gal
30 kg	=Approx. 7.8 Gal
120 kg	=Approx. 30 Gal

15. ADHERING:

The bond of self-adhering articles with KIWOPRINT D 159 can be improved by:

A. Using parts. free of mold release agents or substances such as fats, oil, wax dust impregnations, etc. (Make sure all parts that come in contact with the adhesive are dry.)
B. Optimum application temperature : 68-140°F or 20-60°C.
C. Additional pressure (approx.: 3-4 bar) with a heated silicone rubber pad 104-122°F or 40-50°C.
D. Preventing air bubbles and stretching the substrate juring application.
E. Flat and smooth substrate (i.e. pressure molding parts without burrs or sprue marks.)
F. Sufficient adhesion surface area relative to total surface area.

16. PRECAUTIONS:

The following facts have to be considered:

A. Check the specifications/ requirements such as tack values, peel strength, climate, temperature and UV resistance.

B. Chooose a suitable substrate and test for compatibility with the KIWOPRINT D159. Example: soft PVC may interact with the adhesive layer.

C. If direct contact between printing ink and adhesive will occur, test for compatibility, as some inks may interact with the adhesive layer.

All products mentioned in this technical data sheet are available through KIWO. For further information contact KIWO at 1-800-KIWO-USA.

Thank you for choosing KIWO. 3/96

KIWO, Inc.
1929 Marvin Circle
P.O.Box 1009
Seabrook, TX 77586
Phone: 713-474-9777
(1-800-KIWO-USA)
Fax: 713-474-7325
USA

KISSEL & WOLF GmbH
In den Ziegelwiesen 6
D-69168 Wiesloch
Phone: 6222-578-0
Fax: 6222-578-100
Germany

KISSEL & WOLF Australia PTY. Ltd.
Unit 12, 23 Bunney Road
Oakleigh South, VIC 3167
Phone: 3-551-6887
Fax: 3-551-5532
Australia