

SPUR+™ PSA 3.0 Pressure Sensitive Adhesive

Product Description

SPUR+ PSA 3.0 is a pressure sensitive adhesive supplied as an ethyl acetate solution at 40 percent adhesive solids and may be further diluted with ethyl acetate, butyl acetate, MEK, or MIBK solvents. SPUR+ PSA 3.0 pressure sensitive adhesive has been found useful in coating of film, fabric, and rubber substrates for manufacturing pressure sensitive tapes and labels. Tapes and labels using SPUR+ PSA 3.0 pressure sensitive adhesive exhibit excellent resistance to solvents such as aromatic, aliphatic, anti-freeze, alcohols, brake fluid, acidic/basic aqueous solutions; high temperature shear resistance and adhesion to a variety of substrates. It is particularly suitable for high performance tape and label applications.

Key Features and Typical Benefits

- Excellent solvent resistance for Automotive & Industrial (Gasoline, Diesel, Oil), Medical (Xylene, DMSO, Acids, Alkalis) & Aerospace (Jet Fuel, Hydraulic Fluid) applications
- Wide temperature range performance; maintains good shear and tack properties at intermittent temperatures up to 356°F / 180°C
- Adhesion to a wide variety of surfaces including low energy surfaces (polyoxymethylene, polyolefins, PVC, PMMA, PC)
- Cures on thermally sensitive substrates
- Resistance to moisture and weathering (ozone, sunlight)
- Excellent balance of tack and peel properties
- Can be processed with traditional PSA coating equipment
- Accepts extending filler for cost reduction
- Can be further formulated with other PSA's (acrylic, silicone) and adhesive modifiers (tackifiers), however solvent resistant properties may be compromised.

Typical Physical Properties

| Property | Value |
|---|--------------------|
| Solids, % | 40-42 |
| Viscosity @ 25°C (77°F), cps ⁽¹⁾ | 2,000-10,000 |
| Solvent | Ethyl acetate |
| Specific Gravity, 25°C (77°F) | 0.90 |
| Color | Clear, straw color |

(1) Brookfield RVF, #4 Spindle @ 50 rpm

| Typical Cured Adhesive Properties | Value |
|--|-------|
| Tack, 2 mil PET, g/cm ² ⁽²⁾ | 400 |
| Loop Tack, 2 mil PET, g/in / g/25mm | 5875 |
| Quick Stick, g/in ⁽⁵⁾ / g/25mm ⁽⁵⁾ | 460 |
| Peel from Stainless Steel, g/in ⁽⁴⁾ / g/25mm ⁽⁴⁾ | 770 |
| Peel from Stainless Steel, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1130 |
| Peel from PVC, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1800 |
| Peel from HDPE, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1291 |
| Peel from BOPP, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1078 |
| Peel from PMMA, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1860 |
| Peel from Lexan [‡] , g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1150 |
| Peel from Aluminum, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1355 |
| Peel from Polyoxymethylene, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1000 |
| Peel from Glass, g/in ⁽³⁾ / g/25mm ⁽³⁾ | 1155 |
| SAFT, 1Kg, °C | 275 |

(1) Polyken™ Probe Tack with 100 g/cm² “A” weight, 1cm/s, 1 sec. contact time, 1.0 mil (25 microns) dry adhesive thickness, 0.1% water added, cure cycle: 1.5 minutes at 80°C (176°F)

(2) 180° peel off substrate using 2 mil (50 microns) PET facestock @ 12 inches (305 mm) per minute after 1 hour dwell, 1.0 mil (25 microns) dry thickness, 0.1% water added, cure cycle: 1.5 minutes at 80°C (176°F)

(3) 90° peel off substrate using 2 mil (50 microns) PET facestock @ 12 inches (305 mm) per minute after 1 hour dwell, 1.0 mil (25 microns) dry thickness, 0.1% water added, cure cycle: 1.5 minutes at 176°F (80°C)

(4) PSTC-5

Instructions for Use Application

SPUR+ PSA 3.0 pressure sensitive adhesive is supplied at a viscosity suitable for conventional tape coating equipment. If necessary, it may be thinned with ethyl acetate, butyl acetate, MEK, MIBK or other compatible solvents. After the adhesive is applied to the backing, it is exposed to a two-step process: solvent removal and curing.

Formulation and Bathlife

A starting point formulation consists of a coating bath prepared by thoroughly mixing

0.2 wt% of water into a 30% solids solution of the adhesive. When curing at lower temperatures (below 100°C) 0.02 wt% Fomrez† UL-28 catalyst can be added to further assist in the cure. Typical formulation bathlife at ambient conditions is nominally 8 hours. **Any opened partial containers should be nitrogen purged then resealed to exclude moisture.**

Solvent Removal and Curing Process

To achieve optimum adhesive properties, it is essential to optimize the drying step of the process in order to assure that solvent is removed from the adhesive prior to the curing step of the process. Improper drying will result in residual solvent entrapment within the adhesive. Residual solvent will reduce cure rate and possibly affect adhesive properties. Typical temperature range for the drying and curing is 176°F / 80°C to 302°F / 150°C,

>1.5 minutes oven dwell time. Initial off-coater cure is green and requires ~1 week to develop final high performance properties.

Release Liner

Formulated adhesive may be direct or transfer coated to a facestock. Selection of SilForce* SL6161, SilForce SL6961, SilForce SL6625, SilForce SL7025 or SilForce SL8861 release coatings for Europe were shown to give stable release of

approximately 30-60 g/2in

(30-60 g/50 mm), 300 in/min at 180° peel adhesion for 2 mil (50 microns) PET facestock from 2 mil (50 microns) PET liner.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Technical subject matter in this publication is described and protected by one or more pending US patent applications and foreign counterparts.

Product Safety, Handling and Storage

Customers considering the use of this product should review the latest Material Safety Data Sheet and label for product safety information, handling instructions, personal protective equipment if necessary, and any special storage conditions required.

Material Safety

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Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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