Technical Data Sheet

SilForce™ UV9315 Release Coating

SilForce* UV9315 Release Coating

Description

SilForce UV9315 release coating is an epoxy-functional linear polydimethylsiloxane polymer developed for photocurable paper release coating applications. UV9315 is blended with UV9380C or UV9390C photocatalyst solution prior to use, and is then applied to plastic or paper substrates using standard solvent-free silicone coating application techniques. UV9315 is a very reactive polymer, such that catalyzed UV9315 coatings rapidly crosslink on exposure to focused ultraviolet light. The UV9315 polymer structure is designed to provide a highly crosslinked coating with minimal migration to PSA's laminated to cured UV9315 coatings. UV9315 provides easy- to medium- release from most acrylic and rubber based pressure sensitive adhesives. UV9315 is conveniently blended with the tight release polymer SilForce UV9430 to provide for predictable 'controlled release' (differential release) performance tailored to meet specific application needs.

Key Features and Benefits

- Very fast UV cure in air environment (inerting not required)
- Low temperature cure ideal for thermally sensitive plastic and film liner materials
- Highly crosslinked coating with minimal silicone transfer
- Stable release from crosslinkable acrylic and rubber-based adhesives with flat release profile.
- Nontoxic, low viscosity fluid easy to handle and use.
- Suitable for use with UV9430 tight release polymer for differential release applications

PERFORMANCE

Properly coated and crosslinked UV9315 release coatings provide stable aged release from most organic acrylic and rubber based PSA's. Typical release performance data are shown in Figures 1, 2, and 3. Performance is substrate-, adhesive, and application- specific. Momentive Performance Materials provides this information only as a guide to end-users.

FIGURE 1.

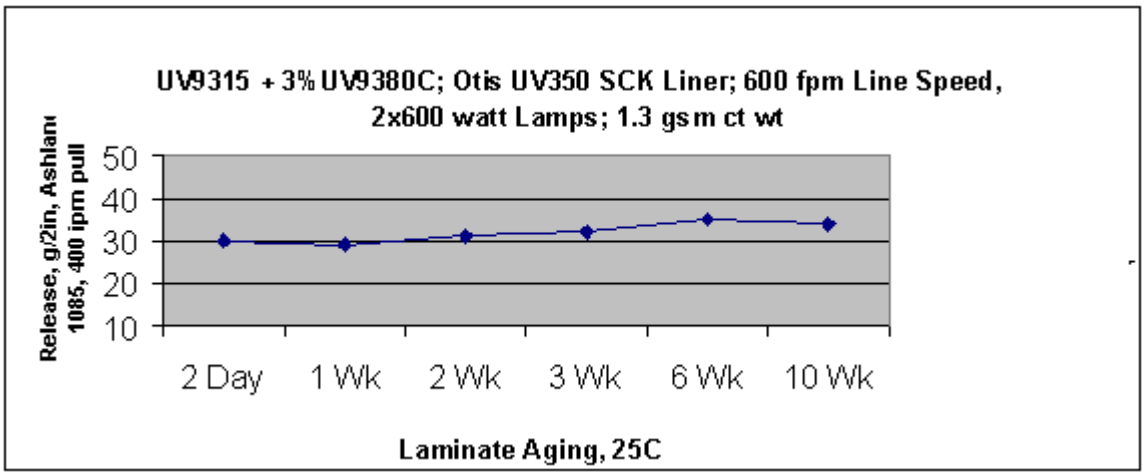
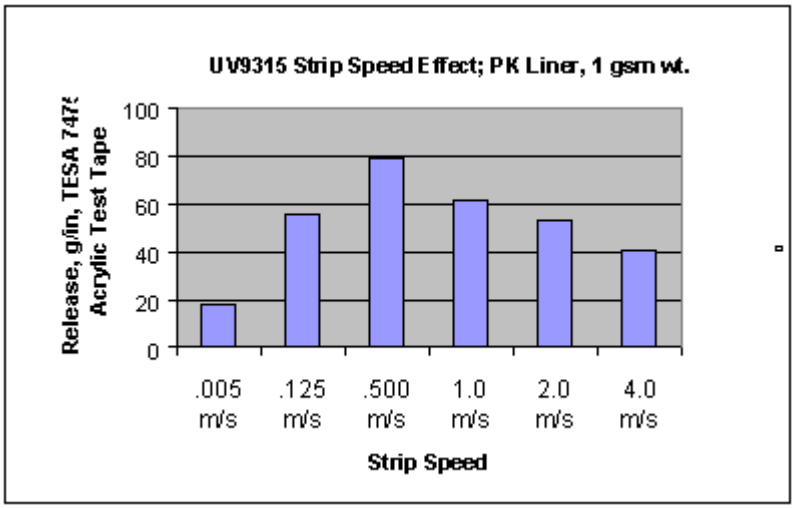


FIGURE 2.



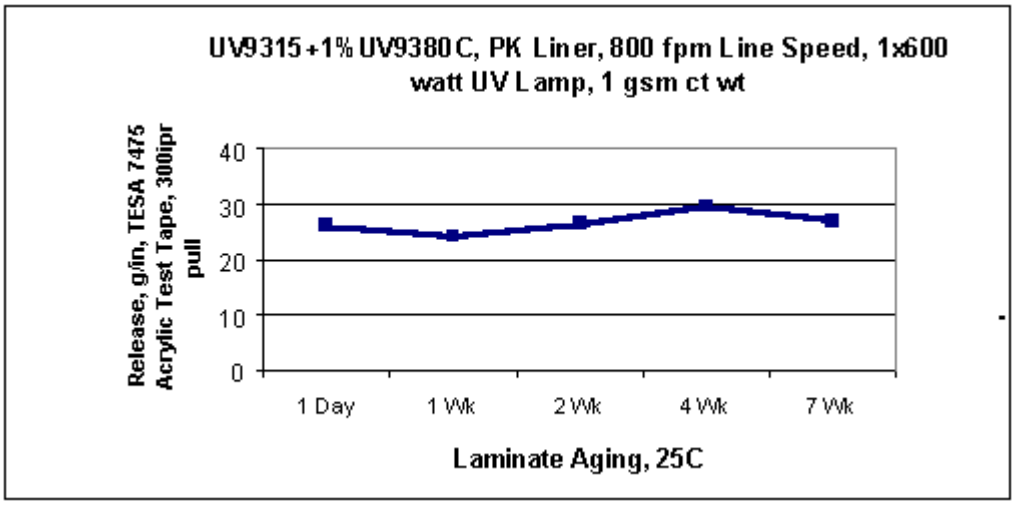


FIGURE 3.

Typical Physical Properties

Property	UV9315 Polymer
Viscosity, @ 25°C	250 cstk
Solids*	> 99%
Specific gravity	0.99
Epoxy Equivalent Weight**	1150 grams/ mole oxirane

* 45 minute weight loss, 1 gram @150°C

** Potentiometric titre

Potential Applications

SilForce UV9315 is most commonly and most effectively coated on glossy plastic liner materials including polyethylene, polypropylene, polyester, and polystyrene, and on laminate liners such as polyethylene and polypropylene krafts ('PK's'). Best cure and anchorage are achieved by use of plastic liners free of mobile plasticizers and slip agents, and by application of in-line corona treatment to at least 40 dyne/cm level prior to coating. Flame-treated, chemically-treated, or films otherwise modified to assist silicone anchorage are also widely used to make UV silicone release liners. UV9315 can also be applied to certain paper and glassine liners. Cellulosic substrates should have very good holdout, and should be neutral or acidic via sizing or other coating treatment to insure that the paper surface is chemically compatible with cationic UV

cure processes. Alkaline matter present in many commercial paper liners such as conventional SCK interfere with cure and anchorage of UV9315. Thorough evaluation of compatibility of any prospective liner with UV9315 cure chemistry and anchorage is strongly advised before committing to commercial production with UV9315. Certain organofunctional silanes including Momentive A-186 and Anchorsil 9000 can be included as coating additives to improve UV9315 anchorage to certain films such as PET, BOPP, and Polypropylene as needed.

Patent Status

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Product Safety, Handling and Storage

Although UV9315 is not considered hazardous, good industrial hygiene and safe practices for handling and use of chemical substances must be followed to insure safety of persons handling this product.

SilForce UV9315 Polymer and UV9380C & UV9390C photocatalyst solution will retain their properties for up to 12 months from date of shipment from Momentive Performance Materials if stored in original sealed containers at or below 25ºC. UV9315 and UV9380C are reactive materials, so care must be exercised to prevent inadvertent contamination of either of these products with strong acids, strong bases or oxidizing agents.

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Processing Recommendations

USE OF PRODUCT

100 parts of UV9315 are thoroughly mixed with 1 to 3 parts of UV9380C or UV9390C prior to use, the precise formulation being dependent on substrate and application. 1-2 parts of catalyst solution are normally sufficient for good cure on most plastic and filmic or polykraft liners, including LDPE, OPP, PET, and PE-laminated kraft (PK). 2-3 parts of UV9380C are recommended if UV9315 is being coated on paper and glassine liner material. A clear to somewhat hazy catalyzed blend will result after at least 10 minutes' vigorous agitation, depending on the epoxy content of the UV9315 in use. If a hazy catalyzed bath of UV9315 sits undisturbed for a day or more, some loss

of the active photocatalyst in the form of a dark residue at the bottom of the mixing vessel may be observed, necessitating thorough remixing. The clarity of the coating bath has no bearing on product performance assuming it has been freshly prepared or freshly remixed. Coating baths should remain useful for several days to several weeks if stored in the dark at or below room temperature. Exposure of a catalyzed bath of UV9315 to direct sunlight or fluorescent room lighting will hasten the onset of gelation, as will extended storage > 30°C.

Limitations
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