

## Sustainable Packaging News Awards 2023

### Category of award:

#### Resource Efficiency

Innovations in the packaging sector which help to utilise resources in a way in which is better for our planet. This can include a reduction in material usage, or reducing the overall carbon footprint. Also covers packaging designs which help prevent waste.

### Product:

FLEXBON 601A/601W - Two Component Solvent Free White Polyurethane Adhesive for Packaging Application

### Description of the innovation:

The world of flexible packaging is growing at an impressive rate driven by consumer preferences shifting toward new attractive packages, ease of use, sustainability, and environment conscious options. To address the challenges towards finding sustainable and eco-friendly options, UFlex Limited – Chemical business has developed FLEXBON 601A/601W, a two-component solvent free white polyurethane adhesive based on green chemistry and acquired an Indian patent (Patent No. 406417; Title: Solvent Free Pigmented Adhesive Composition and a Process for its Preparation).

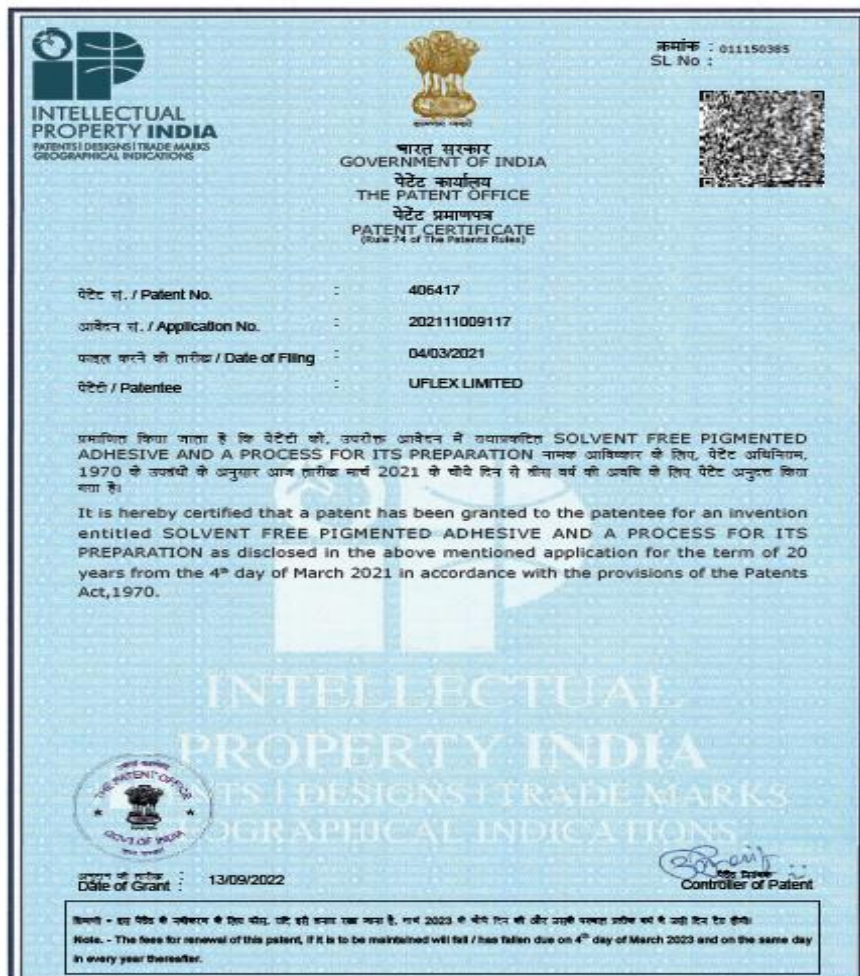


Fig.1: Patent Certificate

FLEXBON 601A/601W is a solvent free general to medium performance white adhesive provides dual properties both adhesive and white ink and works well on existing solvent less lamination machines at faster rates with excellent adhesion, good opacity and gloss. These features make it unique from other lamination adhesives worldwide. It helps to reduce the use of white ink ranging from 20-30% and can be considered to have almost 60 % majority white ink application in flexible packaging, thus significantly reducing VOCs associated with ink and consequently costs effective too. The process for the preparation of the adhesive composition is simple, efficient, solvent-free and environment friendly to provide sustainable and green option for flexible packaging industry.



Fig. 2: FLEXBON 601A/601W white Adhesive

Presence of high content of volatile organic solvents in solvent-based conventional adhesives are being restricted due to environmental regulations due to emission of high volatile organic contents (VOCs) and energy intensive too. Thereby increasing overall costs and VOCs emission, the development of this solvent free white adhesive i.e., FLEXBON 601A/601W, the customer gets the freedom to be green as to have lesser carbon footprints and cost-effective option along with excellent adhesion to variety of films viz. BOPP, METBOPP, LDPE (up to 50 micron thickness) and can be applied with NCPU and all other ink systems.



Fig. 3: Packing prepared with FLEXBON 601A/601W white adhesive

Advantages:

1. The developed adhesive is solvent free, therefore it has no VOC generation itself and cut down the requirement of white ink coating on printed substrates, thereby presenting substantial cost savings along with reduction in emission of ink VOCs. Ultimately reducing the carbon footprint substantially.
2. The adhesive will help to achieve higher machine speeds ranging from 300-350 meters per minute, leading to higher productivity with excellent machinability on existing solvent-less lamination machines.
3. It replaces multi-layered coatings system to mono-layer d with comparable opacity to lead it as sustainable option towards reducing VOCs, energy, and cost.
4. It offers excellent wettability, offer enhanced wettability on metallized substrates, and improves the look of the packaging.
5. It consumes less power and significantly reduces application costs.
6. Low temperature curable system i.e. 35 – 45 °C. Hence, it can be considered as an energy efficient adhesive.
7. The fast decay of primary aromatic amines makes it highly environment friendly and sustainable.

Therefore, this development can be an energy efficient, VOCs free and cost-effective option towards sustainability and green Chemistry for flexible packaging lamination.