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Mitsubishi Chemical Develops New Grade of Adhesive Resin "MODIC™" Making Adhesion of Polypropylene and Polyvinyl Chloride Possible by Co-Extrusion

Mitsubishi Chemical Corporation

Mitsubishi Chemical Corporation (“MCC”; Head office: Chiyoda-ku, Tokyo; President: Hitoshi Ochi) is proud to introduce our new grade of adhesive resin "MODIC™" which has now made the adhesion of polypropylene (PP) and polyvinyl chloride (PVC) possible.

MODIC has excellent adhesive properties for polyolefins, metals and polar resins such as polyamides or ethylene vinyl alcohol copolymer (EVOH). It is widely used for multilayered films/sheets, blow-molding products, and metal coating in food packaging/construction material/automobile industries.

PP and PVC are used as general-purpose resins in various applications, however, adhesion of these resins through co-extrusion*, which is used for producing multi-layered films/sheets, has been considered extremely difficult due to difference in polarity and has required application of solvent-type adhesives.

In an effort to solve this difficulty, our new grade has managed to reinforce the PP-MODIC and PVC-MODIC interfaces through carefully controlling morphology of components having a high affinity to PP and PVC respectively. This has finally made the adhesion of PP and PVC by co-extrusion possible, which has been considered difficult.

In addition, the film produced by co-extrusion of our new product and PVC can be thermally bonded with PP, largely contributing improved efficiency of the entire adhesion process.

With this new grade of MODIC, we expect to contribute more exciting innovations in a future production of films/sheets/profile extrusions with an unprecedented configuration, which combines properties of PP and PVC, in various fields including automobiles and construction materials.

MCC shall also continue to expand our line-up of adhesive resins to meet the diverse needs of our customers and further accelerate the expansion of our performance polymers business.

*A process of producing laminate films/sheets/profile extrusions by simultaneously extruding two or more different types of melted resins through the same die.

For further information, please contact:
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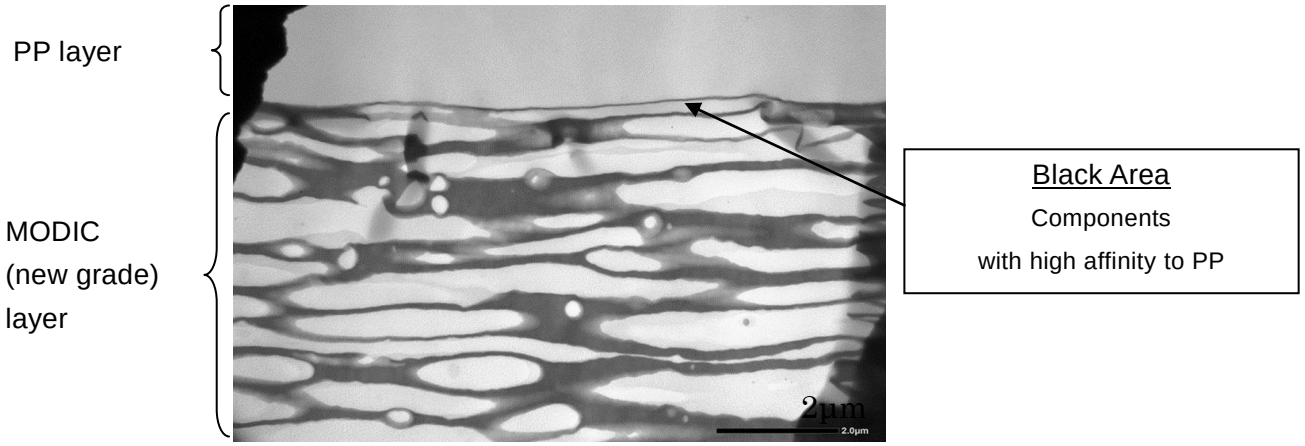
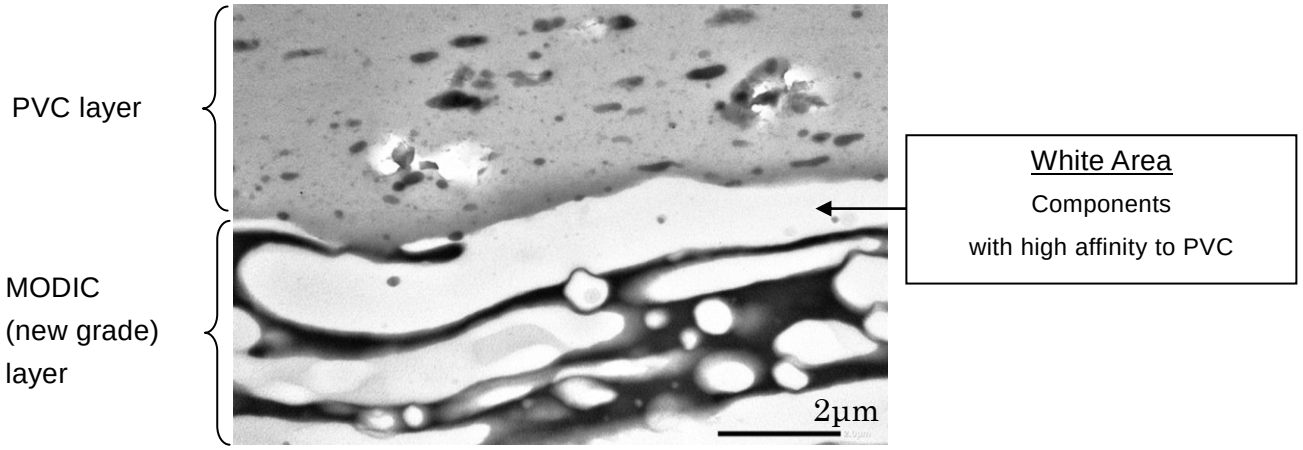
Reference

1. Enlarged TEM image of the interface between PP/PVC and the new grade of MODIC

PP-MODIC (new grade) Interface



PVC-MODIC (new grade) Interface



2. List of MODIC adherends

Adherends	New grade	Current grade A	Current grade B
PP (Polyolefin)	✓	✓	—
PVC	✓	—	✓
Polyamide	✓	✓	✓
EVOH	✓	✓	✓
PET	✓	✓	✓