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Proell's core business is the development of custom-made chemical products for coating/decorating plastics, metals, glass and other materials, as well as innovative ink systems and protective lacquers for the IMD/FIM technology, and screen and pad printing inks.

Product News:

1. NORIPHAN® HTR N 990/011 NC - non-conductive black for IMD/FIM technology

NORIPHAN® HTR N is an established, formable, backmoldable and solvent-based one-component screen printing ink for the film insert molding technology.

Due to the development of the new deep black opaque color shade NORIPHAN® HTR N 990/011 NC, a carbon black-free, non-conductive black is available for printed electronic applications now.

The color shade has a high optical density, an electrical resistance in the giga ohm range and is radar transmissible.

The color shade can be used for decorative prints but is mainly used for plane multi-layer printing or backing of metallic and polymer conductive pastes. Carbon-based pigments, so called carbon blacks, normally used for black color shades, are electrically conductive and can interfere with the functional structures. NORIPHAN® HTR N 990/011 NC meets the increased requirements regarding thermal resistance and the demanding hydrolysis test in the automotive industry.

The NORIPHAN® HTR N 990/011 NC color shade has been formulated and optimized regarding the interlayer adhesion and shows good adhesion in compound values in the final film/ink/injection material composition.

Picture 1: Non-conductive black color shades for IMD/FIM

Picture 2: Picture collage - functional IMD/FIM demo part from TactoTek. Non-conductive IMD/FIM ink systems can be used for back printing of the printed conductive pastes.

2. NORIPHAN® HTR N 959 IR transparent black screen printing ink for IMD/FIM technology

With the development of the IR transparent NORIPHAN® HTR N 959, a carbon black free, non-conductive black color shade is available for functional touch panel applications. The color shade has a black appearance in incident light. Under transmitted light the color shades appear transparent and is ideally suited for IR & lidar transmitting areas in display and touch panel applications.

Picture 3: Functional climate control panel, PC hard coat film is partly second surface printed with NORIPHAN® HTR N 959

3. NORIPHAN® HTR N 945/546 – UV stabilized white

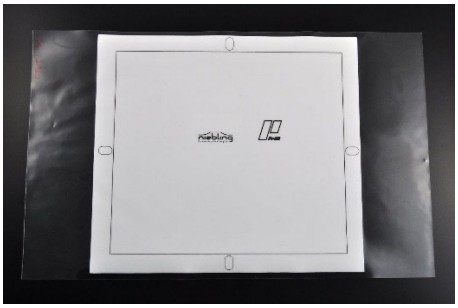
NORIPHAN® HTR N 945/546 is a special adjusted UV stabilized white color shade, which can be used for BEV front modules. Front modules for electric cars will be decorative, multi-colored, and functional.
The screen printed ink layers are located in between a film and coating compound.
Thereby, the IMD/FIM screen printing inks are protected by the transparent films and hard coat layers.
Nevertheless, the weathering stress on a whitely screen printed ink layer is very high, so that a special pigmentation is necessary to adjust the color shade stable.
With the NORIPHAN® HTR N 945/546 – UV stabilized white, an optimized, nearly discoloration free, color shade is now available for the second surface application in front modules.

4. NORIPHAN® HTR N 093/380 – Diffusing Lacquer – white transparent

The white (transparent) formulated screen printing lacquer is part of the one-component NORIPHAN® HTR N IMD/FIM ink range.
The lacquer is used to diffuse punctually LED spots into a homogenously spread light area.
The diffusing lacquer can be used instead of cost-intensive light management films.

5. Adhesion Promoter PP L67333 – Adhesion Promoter for PP-IMD/FIM

Adhesion Promoter PP L67333 is an adhesion promoter for IMD/FIM technology (Film Insert Molding) which makes back molding of second surface screen printed polypropylene films with polypropylene injection molding material possible. Up to now, back molding of PP film laminates was possible only.
The one-component, solvent-based adhesion promoter PP L67333 has been developed for back printing pre-treated PP films. The IMD/FIM screen printing inks NORIPHAN® XWR and NORIPHAN® N2K are best suited for printing onto PP films.
The printed film shows excellent cohesion in compound values when back molding with various PP materials. Automotive decorative parts and panels as well as motorcycle fairings and tool housings can be produced in durable quality by using the PP IMD/FIM process.



Pictures 4-5: PP IMD/FIM demo part; PP film is back printed with NORIPHAN® XWR and Adhesion Promoter PP L67333 and back molded with PP

6. Norilux® DC

Norilux® DC is a formable, abrasion and chemically resistant Dual Cure screen printing lacquer. Norilux® DC can be used as protective lacquer or hard coat on PC, PMMA, ABS and PP films.

Norilux® DC is ideally suited for first surface coating/protection of products manufactured in IMD/FIM technology.

The glossy version of the dual cure lacquer can be printed on textured film surfaces to produce abrasion resistant and transparent display windows.

The matt version of Norilux® DC can be printed on uncured transparent hard coat films to create matt and high gloss effects on one surface.

Besides the high glossy Norilux® DC lacquer, various satin gloss, textured and matt grades as well as pigmented and UV stabilized versions are available.

Tactile surface structures e.g. brush effects and 3D patterns can be printed with the highly resistant lacquer.

Norilux® DC dries by evaporation of the solvents in jet dryers. Films decorated with Norilux® DC can be 3D formed after box oven drying e.g. by high pressure forming or thermo forming. Afterwards, the formed films must be UV cured. The cured lacquer layer shows excellent resistances to abrasion, chemicals and cleaning agents and passes various creme tests of the automobile industry.

In automotive interior, center stacks, touch panels and decorative trims are first surface protected with Norilux® DC.

Even mobile phone covers and sanitary panels are overprinted with the highly resistant lacquer. Second surface decoration is printed with the IMD/FIM ink system NORIPHAN® HTR N.

Picture 6: Decorative tactile effect, printed with Norilux® DC on a PC film. Second surface decoration including secret-til-lit effect was printed with the IMD/FIM ink system NORIPHAN® HTR N.

Picture 7: Decorative tactile aluminum brush effect, printed with Norilux® DC on a PC film. Second surface decoration including secret-til-lit effect was printed with the IMD/FIM ink system NORIPHAN® HTR N.

7. NoriCure® ORL-1

The weather resistant UV curing lacquer can be used for overprinting of solvent-based ink systems (for example, Thermo-Jet®, NoriPUR®) as well as for printing on PVC self-adhesive films, Polycarbonate, rigid PVC and PMMA.

NoriCure® ORL-1 protects the overprinted ink layer from UV-radiation and is outdoor resistant.

The protective lacquer is available as high gloss version NoriCure® ORL-1/001 and as matt version NoriCure® ORL-1/002. The screen printing lacquer shows excellent printing properties, good scratch and abrasion resistance as well as high chemical resistance.

8. Thermo-Jet® CFI

Glossy multi-purpose one-component ink for printing on acrylics, rigid and soft PVC, polycarbonate and pre-treated polyester. The fast drying Thermo-Jet® CFI ink shows good printability and high resistance to chemicals and abrasion. On suitable substrates the ink is deep drawable and weather resistant.

Thermo-Jet® CFI can be processed as screen and pad printing ink.

The ink system is formulated free of cyclohexanone.

Picture 8: Color swatch – Color Information solvent-based screen & pad printing inks

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