Digital Printing with Pigment Inks

Techtextil North America
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Since 1894 our company stands for outstanding service and high quality.

We offer a broad-based product portfolio and truly understand the needs of our customers – which is why we focus on both long-term perspective and solidarity.

With our expertise, innovation strength, and top-quality standards, we create sustainable value today and for the future.
Our business locations

- Canton
- Wissembourg
- Montevideo
- Pilar
- São Leopoldo
- Querétaro
- Lahnstein
- Milledgeville
- Tricerro
- Sassuolo
- Hong Kong
- Sharquia
- Shakhty
- Burgstaedt
- Hassloch
- Poltava
- Tricerro
- Sanshui
- Shanghai
- Kloten
- St. Mandé
- Milledgeville
- Montabaur
- Istanbul
- Brueggen

29 Companies in 15 countries on 5 continents

1,292 Employees

More than 80% of sales outside Germany
Business divisions

CARE SPECIALITIES
LEATHER AUXILIARIES
CERAMIC AUXILIARIES
FIBER AUXILIARIES
TEXTILE AUXILIARIES
PHOSPHONATES
POLYMERS
Textile auxiliaries division

- Innovations for textile manufacturing.
  Main application areas:
  - Pre-treatment
  - Dyeing
  - Finishing & coating

- DIAMONTEX – solutions for digital printing
  - Primer
  - Inks
  - Post-treatment
DIAMONTEX P
Pigment Inks
Pigment inks for digital printing

Pigment ink market

Conventional printing
- reactive / dispersions / acid, 47%
- pigment, 53%

Digital printing
- reactive / dispersions / acid, 97%
- pigment, 3%
Pigment inks for digital printing

**Highlights**
- High light fastness
- Easy process
- Suitable for many substrates

**Main problems**
- Limited to multiple wash
- Limited rub fastness
- Touch (stiffer than reactive printing)
Pigment inks for digital printing

**PIGMENT**

- INKJET-PT (optional)
- PRINTING
- CONDENSATION
- FINISHING

**REACTIVE**

- INKJET-PT
- PRINTING
- STEAMING
- AFTERTREATMENT
- FINISHING

**easy and short process!**
DIAMONTEX P

Pigment technology

- Well-dispersed, stable pigments with low size distribution
- Reliable inkjet printing performance
- Printable on almost any fabric
- Simple drying process for binding the pigment to the substrate

nano-sized pigment < 250 nm
polymer encapsulation with cross-linking agent for each single pigment
DIAMONTEX P – mechanism on textile

Standard pigment ink

- Pigments and textile covered with binder
- Adhesion mainly with textile top surface
- Harsh and stiff textile handle
- Low fastness to washing and rubbing

DIAMONTEX P

- Pigments embedded in the textile
- Strong adhesion to various textile fibres
- Soft touch
- Good rubbing and wash fastness
DIAMONTEX P – available colours

- DIAMONTEX CYAN P
- DIAMONTEX MAGENTA P
- DIAMONTEX YELLOW P
- DIAMONTEX BLACK P
- DIAMONTEX GREEN P
- DIAMONTEX SCARLET P

* DIAMONTEX WHITE P *

* actually in printing tests and optimization
Diamontex P inks are individually designed for different low to high viscosity printhead technologies:

- **Epson DX4 to DX7**
- **FujiFilm Dimatix Starfire**
- **Ricoh Gen 4 and 5**

- Further printheads on request
- For high printing performance, printing should be done at defined climate conditions (relative humidity 45% to 65%, temperature 20°C to 25°C)
- Soft shaking before usage (pigment sedimentation during storage possible)
- Recirculation printheads or circulating ink delivery systems are required for DIAMONTEX P WHITE
DIAMONTEX P – performance on textile

Studies regarding wash fastness (unprimed cotton)
DIAMONTEXTEX P – performance on textile

Multiple washing

Printing sample 100% cotton woven (unprimed)

Original

Washing at 60°C
- 5 times
- 10 times
- 15 times
- 20 times
- 25 times

Printing sample blend of polyester/cotton (50/50) woven (primed)

Original

10 times at 75°C

Industrial washing
Studies regarding rub fastness (unprimed cotton)

- Good dry rubbing performance (values between 4 and 5)
- Acceptable wet rubbing performance (values between 3 and 4)

Better rubbing performance than standard ink due to encapsulation!
DIAMONTTEX P – performance on textile

Pretreatment necessary or not? – depends on the textile fabric

unprimed polyester

primed polyester
DIAMONTEX P – performance on textile

First customer experiences on special materials

unprimed

Artificial leather

Leather

Nomex

primed
Thank you for your kind attention

Come and visit us at Booth 2249!

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