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Perstorp in brief

- World leader in several sectors of the specialty chemicals market
- Pioneer in formalin chemistry, plastics and surface materials
- Perstorp was formed in 1881, over 130 years of winning formulas
- Since December 2005 controlled by PAI partners, a leading European private equity company
- Annual turnover of more than 10 billion SEK in 2012
- About 1,500 employees in 22 countries
- Production plants in Europe, Asia and North America
- Sales offices in all major markets
Perstorp in the PVC industry

- Fully integrated plasticizer producer based on the west coast of Sweden since 1980’s
- Perstorp exited the DOP business in 2012
- Storage facilities in UK, Belgium, Germany and Portugal to serve entire Europe
- Focus on European market and sustainable growth
- Member of ECPI, VinylPlus and founding member of PlasticiserPlus
Perstorp believes in plasticizers

- Perstorp is making its largest investment in history
- Based on our own technology and backwardly integrated in raw materials
- It will be on stream in Q1 2015
- Two plasticizers in the product tree, Emoltene™ 100 and Pevalen™
- This investment will increase the production by 150 000 MT
Emoltene™ 100

Versatile general PVC plasticizer
- Established C10 (DHP) GP plasticizer
- Excellent versatility and flexibility
- Expands lifespan of end products
- High technical performance, with good outdoor properties

Flexible, versatile & safe

Investment for a more sustainable future

Pevalen™

Innovative plasticizer for sensitive applications
- New capacity for Valeraldehyde and its derivatives
- Strengthen our production platform
- Fully integrated and secure supply chain
- Ability to offer competitive and safe products

High performance polyol ester plasticizer
- Highly efficient in providing softness
- Easy to process and use
- Low volatility ensuring no VOC and consistent properties
Emoltene™ 100 and Pevalen™ focus on different markets

**Emoltene™ 100 - Durable applications**
- Wire and cables
- Films & sheets e.g. roofing membranes, swimming pool liners, automotive foils
- Coated fabrics; e.g. tarpaulins
- Automotive interiors

**Pevalen™ - Sensitive applications**
- Coated fabrics; e.g. table cloths, protective clothing
- Films & sheets; e.g. office materials, furniture foils
- Flooring
- Plastisols; e.g. wallpaper, toys
- Moulded parts; e.g. grips
Key segments where Emoltene™ 100 is preferable

CABLES & WIRES
- Low volatility and high UV resistance with C10 plasticizer
- Well accepted for PVC cables at all major users

AUTOMOTIVE INTERIOR
- Low volatility/migration of C10 plasticizers secures long life span required
- Plasticized PVC not easy substituted for this industry due to the advantage PVC has vs. other polymers

FILM AND SHEETS
- Low volatility of C10 plasticizers secures long life span required
- Plasticized PVC good UV stability and outdoor resistance
Emoltene™ 100 (DPHP) has low volatility
Emoltene™ 100 (DPHP) makes the product durable
Emoltene™ 100 (DPHP) has lower fogging
Emoltene™ 100 (DPHP) is suitable for car interiors
## Migration to plastics

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- Emoltene™ 100 (DPHP) has low migration
- Emoltene™ 100 (DPHP) contributes with high permanency

*Source: [www.filmandsheet.com](http://www.filmandsheet.com), [www2.teknorapex.com/PVC-Plasticizer-Migration](http://www2.teknorapex.com/PVC-Plasticizer-Migration)*
Emoltene™ 100 (DPHP) has low water absorption

Emoltene™ 100 (DPHP) suitable for outdoor applications
Pevalen™

- A versatile general purpose plasticizer that is equal to or in some cases better than standard phthalate plasticizers

- Perstorp is increasing capacity and will meet customer demand. Perstorp will by 2015 be fully integrated in raw materials.

- At this time, Pevalen™ will be commercially competitive to other high volume plasticizers

- The chemistry is well established and proven

- Process for food contact approval underway
Easy storage

- Pevalen™ has low viscosity even at temperatures below 0 °C
- Pevalen™ does not need to be heated during storage
Processing – top of the class

- Pevalen™ has short dry blend time
- Pevalen™ gives fast processing
Pevalen™ has a unique combination of low volatility and high plasticizing efficiency
Migration to rubber

Pevalen™ has lower or equal migration to rubber
Migration to plastics

- Pevalen™ has comparable migration to plastics
- Pevalen™ high compatibility to PVC is also shown here it has a tendency to migrate more to non-plasticized PVC
**Durability**

- **Pevalen™** has very good resistance to chemicals
- **Pevalen™** has same performance as other plasticizers on oil
Durability

**Extraction water solutions**

- **1 % Soap**
- **1% NaOH**

- **Weight loss %**
- **DI NCH**
- **DI NP**
- **DOP**
- **Pevalen™**
- **DOTP**

→ Pevalen™ has same or better resistance to water solution as other plasticizers.
Summary Plasticizers

**Emoltene™ 100** - well-established HMW phthalate plasticizer
- Available in high volumes
- Highly competitive production platform
- Valued for low water absorption, low volatility and migration
- Reflected in improved durability, good outdoor resistance and long life span

**Pevalen™** – an innovative polyol ester plasticizer
- High performance polyol ester plasticizer
- Highly efficient in providing softness
- Easy to process and use
- Low volatility and migration ensuring no VOC and consistent properties
Thank You for your attention!

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Perstorp Group