

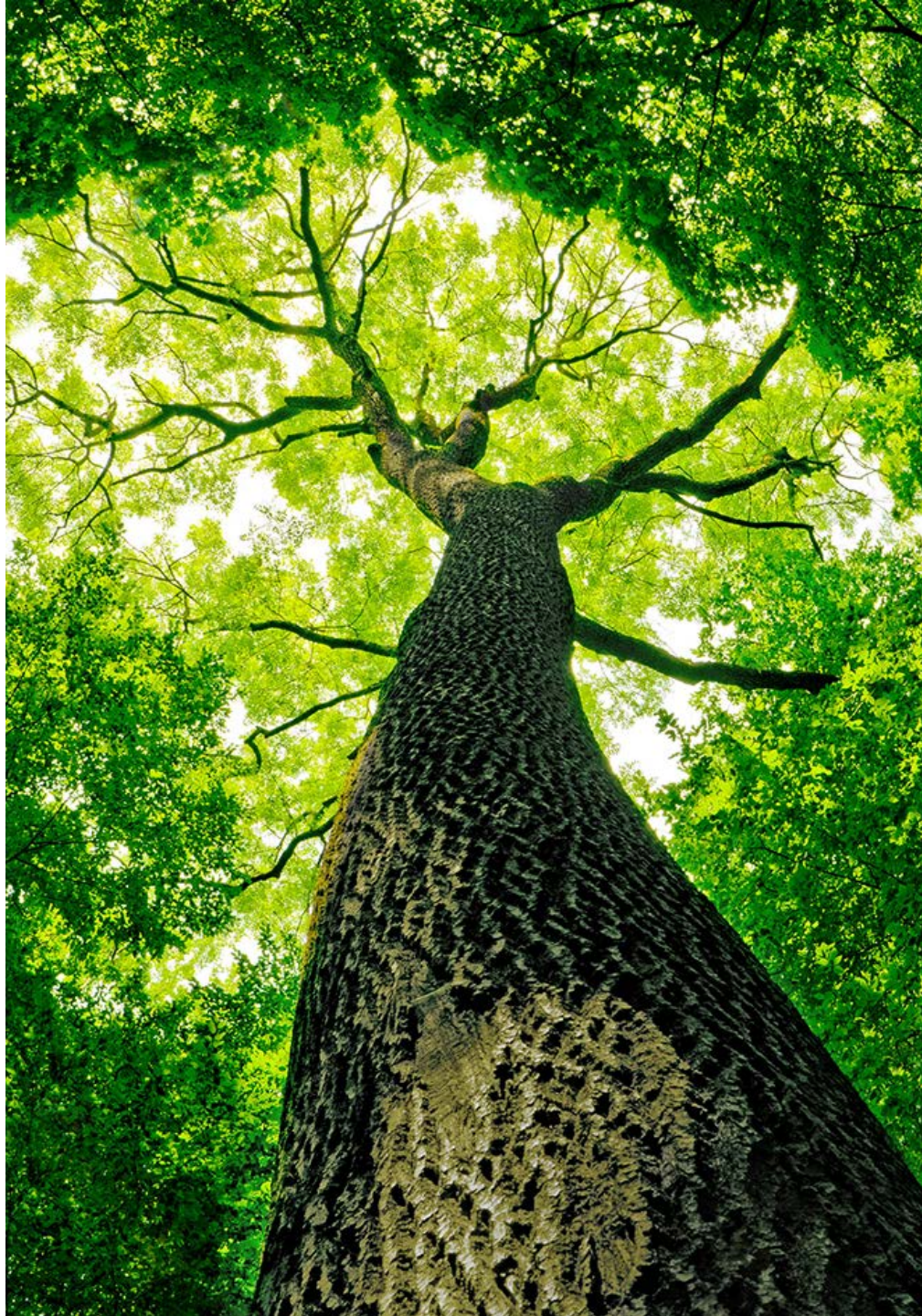
Plasticizers for today and for the future

PVC Formulation 2014, Dusseldorf

*Perstorp contributes to a better more sustainable world by delivering
innovative chemical solutions*

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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

Investment for a more sustainable future

Pevalen™

Versatile general PVC plasticizer

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

Flexible, versatile & safe

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

Innovative plasticizer for sensitive applications

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



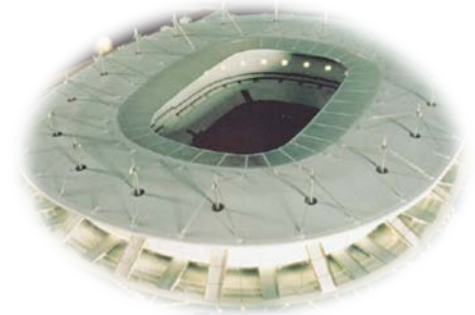
CABLES & WIRES

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



AUTOMOTIVE INTERIOR

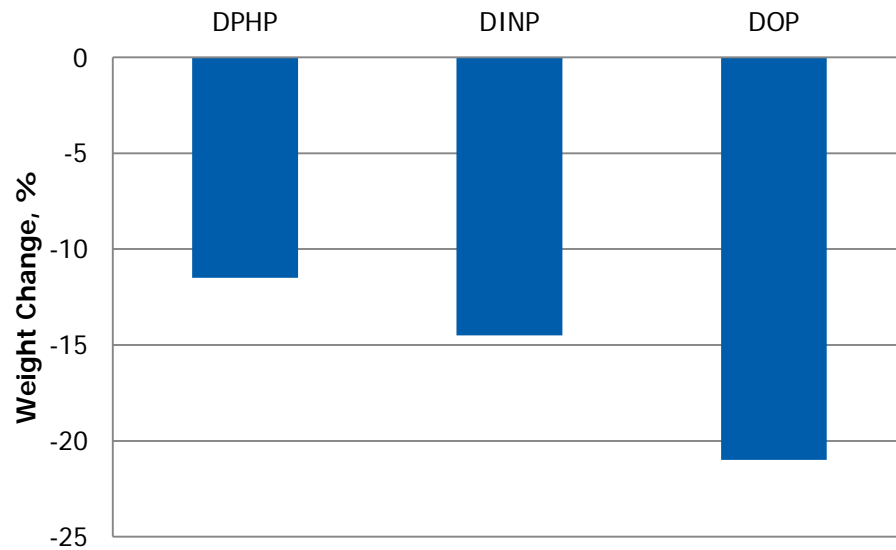
- ➔ Low volatility/migration of C10 plasticizers secures long life span required
- ➔ Plasticized PVC not easy substituted for this industry due to the advantage PVC has vs. other polymers



FILM AND SHEETS

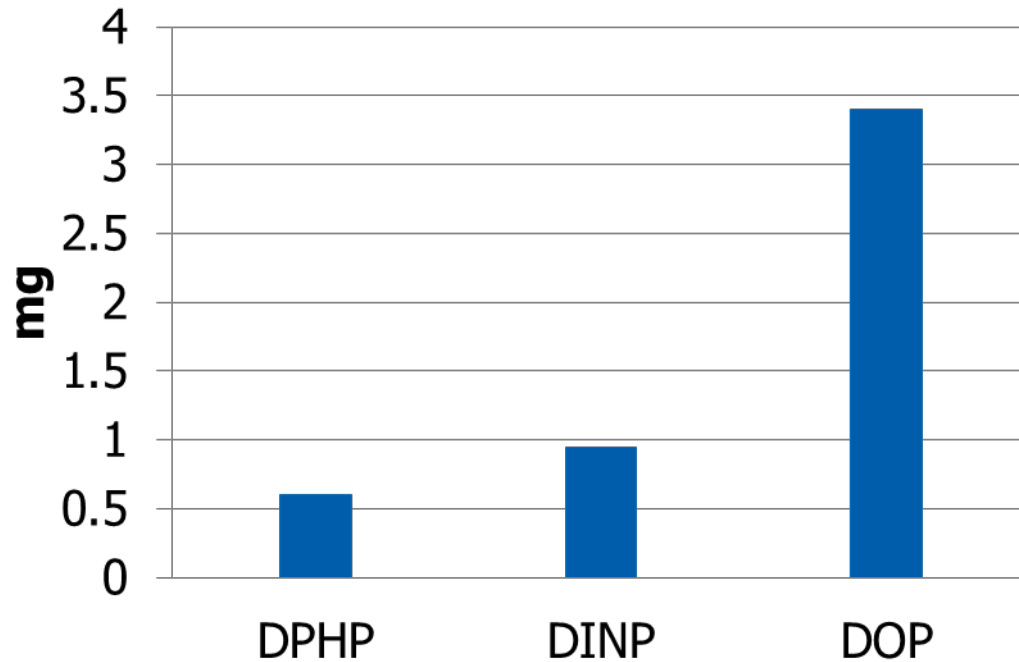
- ➔ Low volatility of C10 plasticizers secures long life span required
- ➔ Plasticized PVC good UV stability and outdoor resistance

Volatility



- ➔ Emoltene™ 100 (DPHP) has low volatility
- ➔ Emoltene™ 100 (DPHP) makes the product durable

Fogging



- ➔ Emoltene™ 100 (DPHP) has lower fogging
- ➔ Emoltene™ 100 (DPHP) is suitable for car interiors

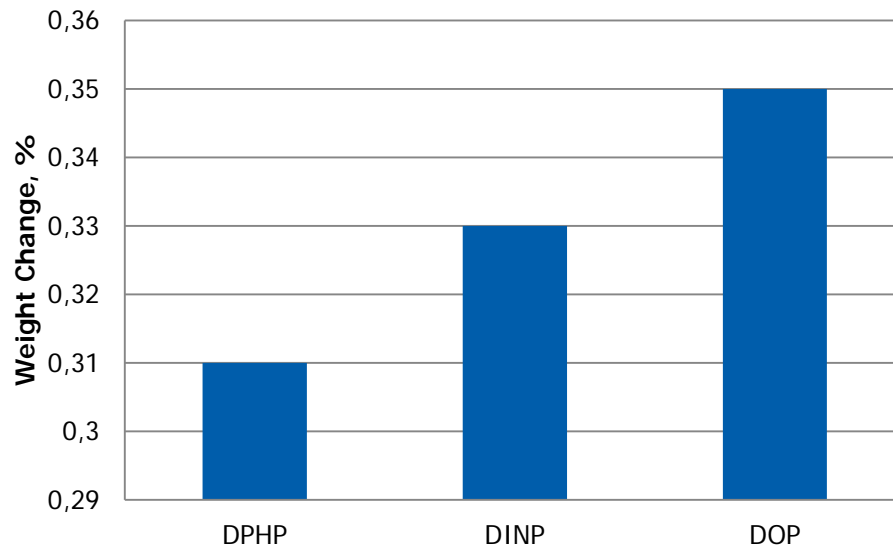
Migration to plastics

ABS	PC	PS	Acrylic
TOTM	Polymeric	Polymeric	Polymeric
<i>DPHP</i>	TOTM	TOTM	TOTM
DOTP	<i>DPHP</i>	DOTP	<i>DPHP</i>
DEHP	DINP	DINP	DINCH
DINCH	DINCH	<i>DPHP</i>	DINP
DINP	DOTP	DEHP	DOTP
Polymeric	DEHP	DINCH	DEHP
DOA	ATBC	DOA	DOA
ATBC	DOA	ATBC	ATBC
Benzoate	Benzoate	Benzoate	Benzoate

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



Water absorption



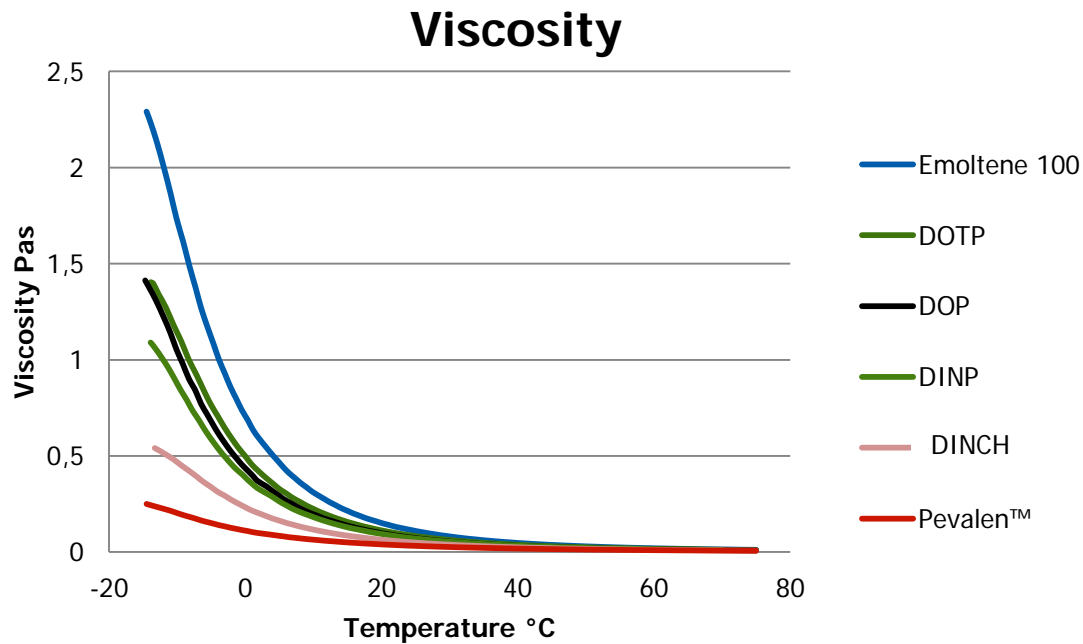
- ➔ Emoltene™ 100 (DPHP) has low water absorption
- ➔ Emoltene™ 100 (DPHP) suitable for outdoor applications

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



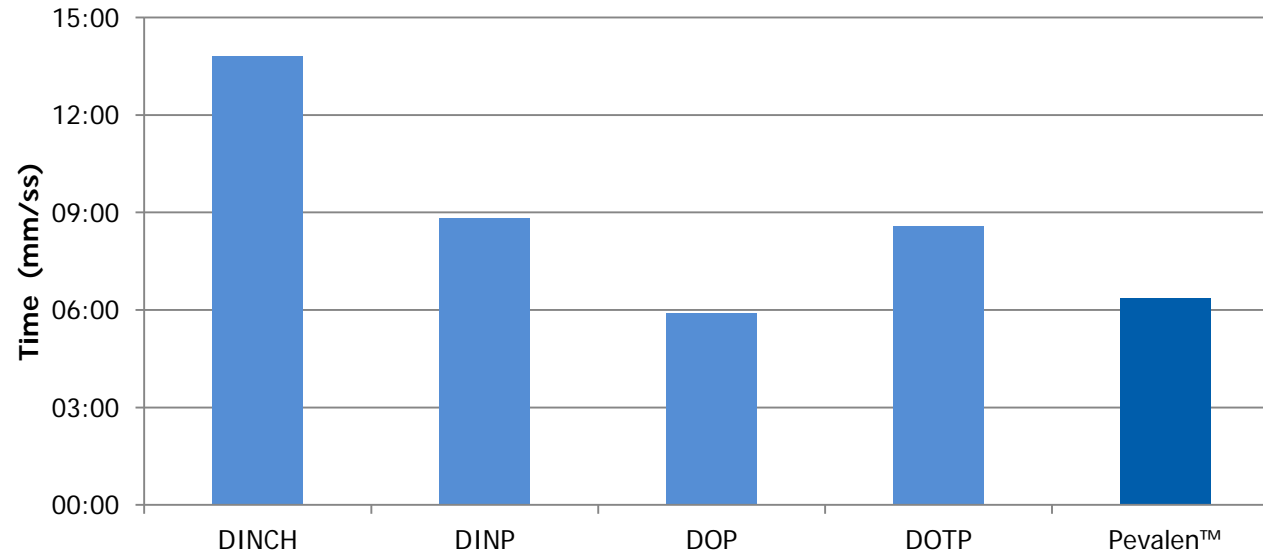
Easy storage



- ➔ Pevalen™ has low viscosity even at temperatures below 0 °C
- ➔ Pevalen™ does not need to be heated during storage

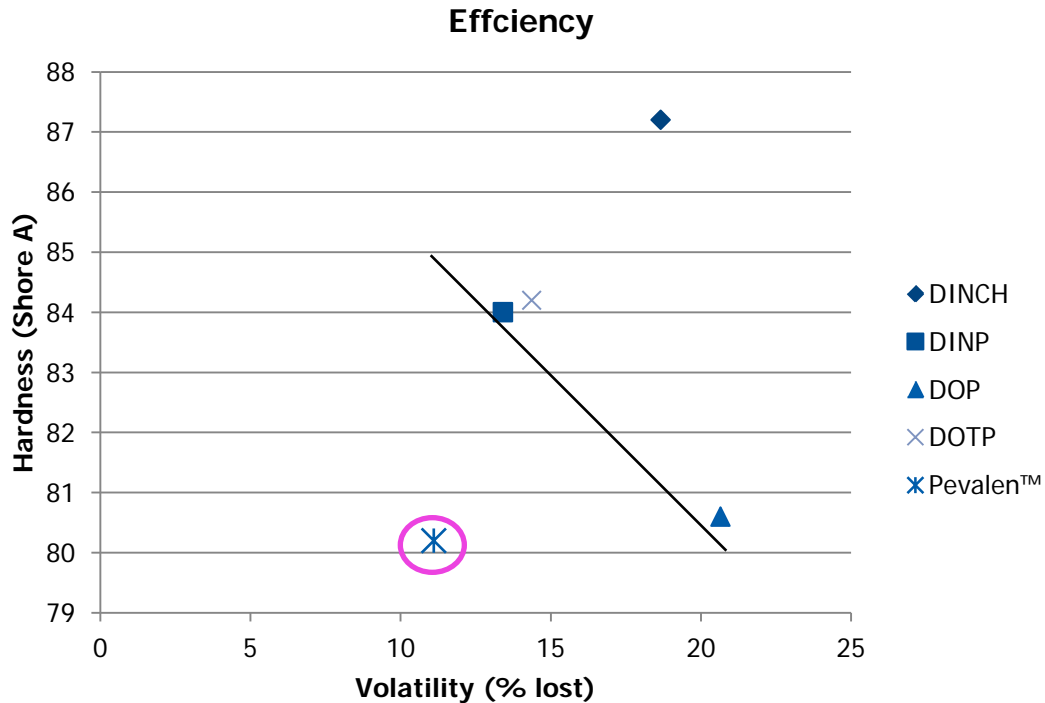
Processing – top of the class

Dry blend time



- ➔ Pevalen™ has short dry blend time
- ➔ Pevalen™ gives fast processing

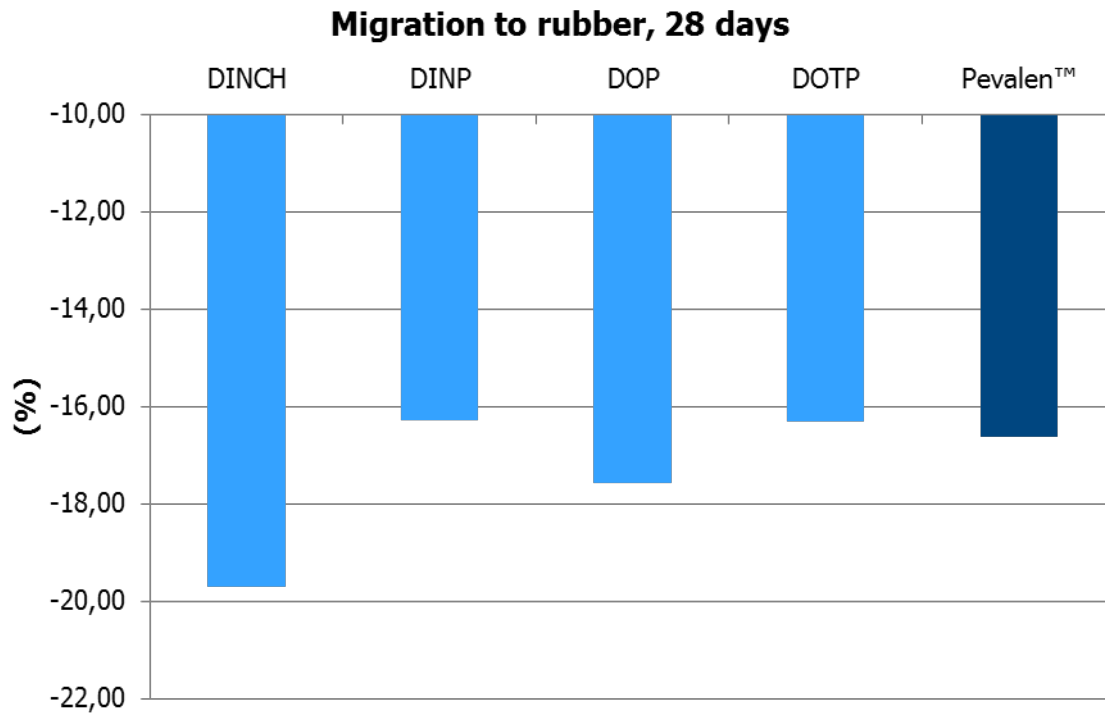
Unique product performance



➔ Pevalen™ has a unique combination of low volatility and high plasticizing efficiency

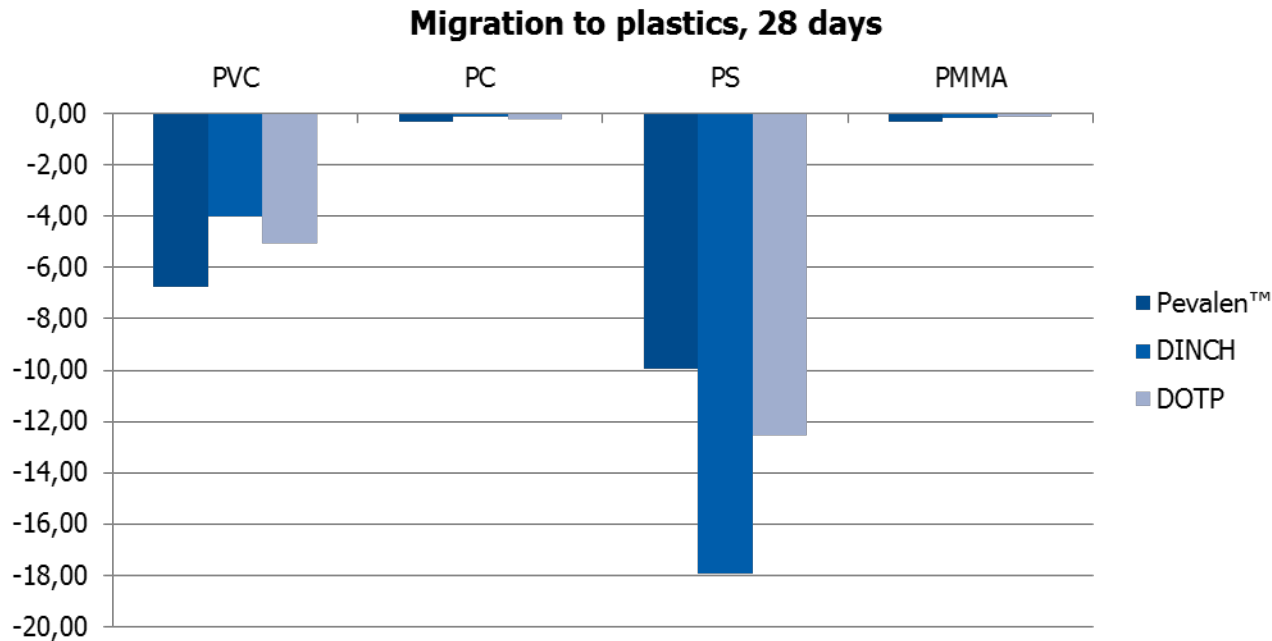


Migration to rubber



➔ Pevalen™ has lower or equal migration to rubber

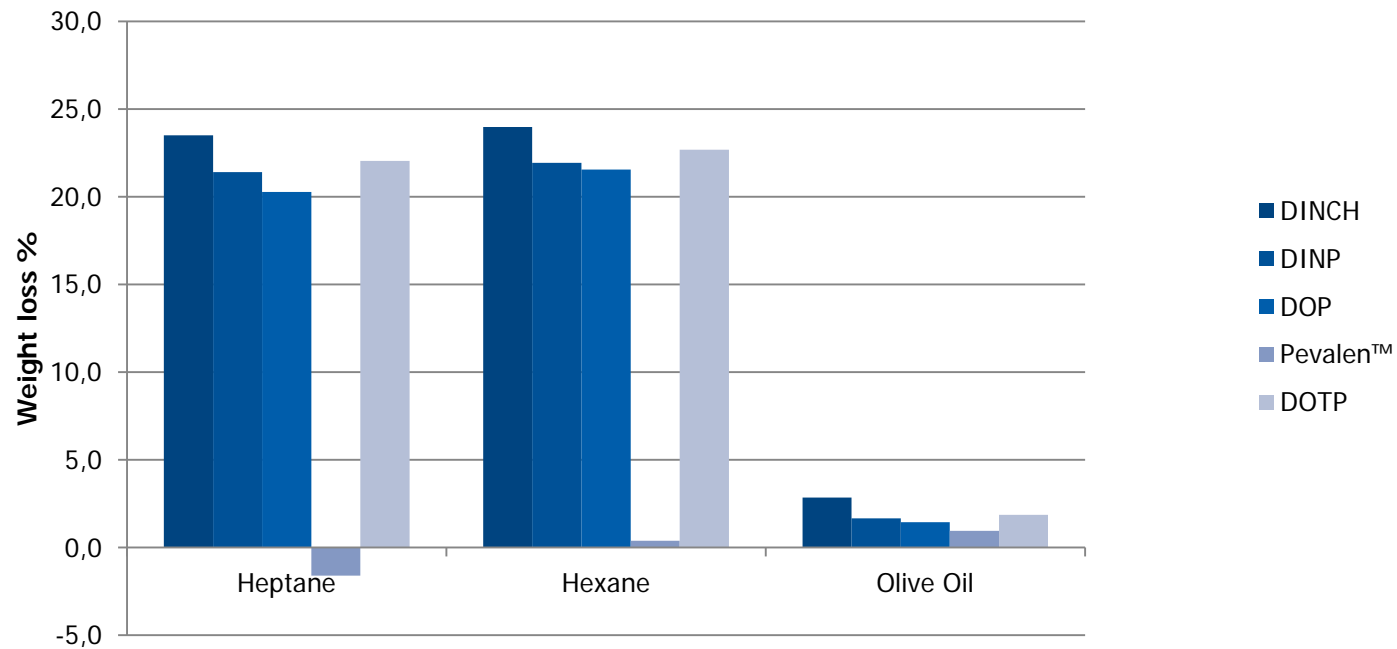
Migration to plastics



- ➔ 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

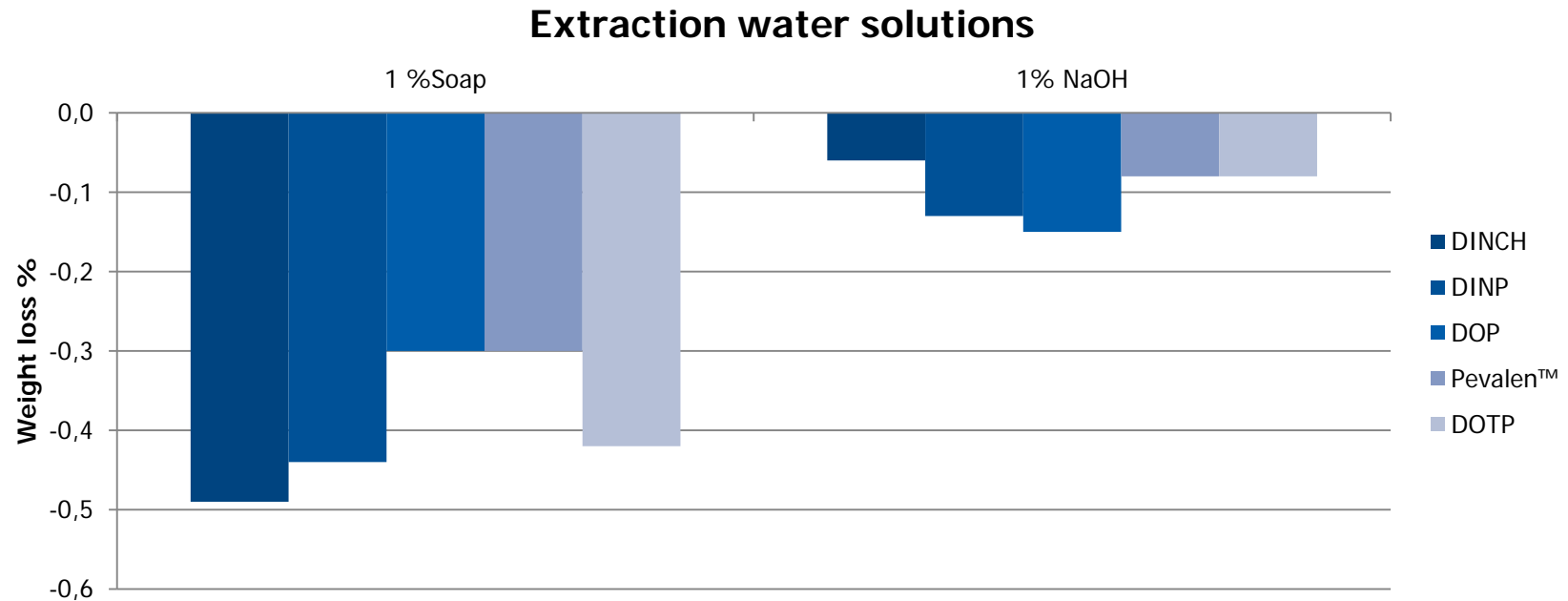
Durability

Extraction chemicals and oil



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

Durability



➔ 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

