Plasticizers Evonik product portfolio





PERFORMANCE INTERMEDIATES – CHEMISTRY4PEOPLE®

PLASTICIZERS FROM EVONIK

Plasticizers from Evonik offer manufacturers of flexible PVC and their products flexibility, safety and above-average technical performance with a consistently high level of quality.

Plasticizers act like a molecular lubricant: The molecules sandwich themselves between the polymer chains of PVC. This makes the originally tightly-packed, rigid structure flexible, allowing the chains to slide past each other.

WE OFFER OUR CUSTOMERS

Maximum delivery reliability

- Verbund production ensures optimal supply
- As a major producer of oxo alcohols continuous production of high-quality plasticizers

A full service from a single source

- Needs-based support from order to delivery
- Support from a well-established team with technical and regulatory knowledge
- · Information about new developments

A strong commitment to regulatory issues

- Membership and active participation in several industry associations of the flexible PVC value chain
- Involvement in the public debate surrounding regulatory topics
- Active support of a science-based assessment of chemicals

CONTENTS



VESTINOL® 9 (DINP) is a very effective standard plasticizer for a wide range of flexible PVC applications with the best cost-performance ratio and a very balanced property profile.

Learn more

ELATUR® CH (DINCH) is a modern, low-viscosity plasticizer with excellent cold flexibility and very good migration properties especially suitable for sensitive applications.

Learn more



ELATUR® DINCD is an innovative low-viscosity plasticizer with excellent cold flexibility and very low volatility especially suitable for demanding applications. Learn more



ELATUR* **DPT** is a fast fusing, low-viscosity plasticizer with very low SVOC content and high gelation power preferably used for manufacturing of PVC plastisols. Learn more

Plasticizers from Evonik 7

VESTINOL[®] 9

Efficiency. The allrounder sets the benchmark.

VESTINOL® 9 (DINP) is a very effective standard plasticizer for a wide range of flexible PVC applications with the best cost-performance ratio and a very balanced property profile.

VESTINOL[®] 9 (DINP)

APPLICATIONS

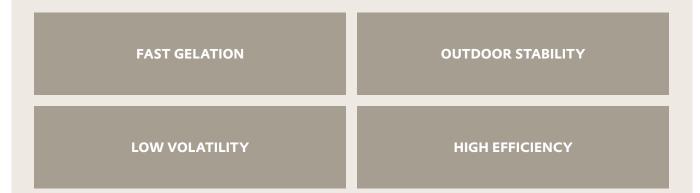
- Plasticizer for PVC
- Adhesives & Sealants
- Coatings & Paints

SPECIAL OFFERINGS

- Plastisol ready-for-use grade VESTINOL® 9 cool available
- Life-cycle assessment data available

PERFORMANCE AT A GLANCE

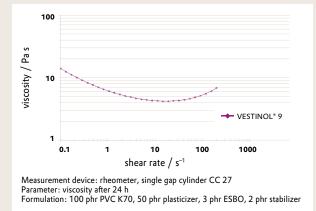
- Excellent plasticizing efficiency
- Very good viscosity and aging profile
- High gelation and fusion speed
- · Excellent cold flexibility and outdoor stability
- Very good migration properties



PROCESSING PERFORMANCE

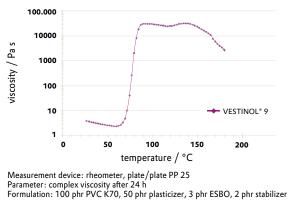
VISCOSITY

Plastisols with VESTINOL® 9 show a very good viscosity profile.



GELATION

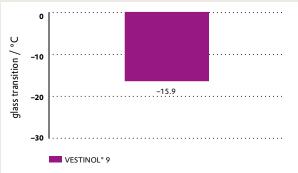
VESTINOL® 9 offers a high fusion speed.





COLD FLEXIBILITY

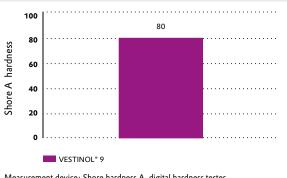
Products with VESTINOL® 9 show excellent low temperature flexibility.



Measurement device: dynamic mechanic thermal analysis (DMTA) Parameter: Evonik method, glass transition temperature Tg Formulation: 100 phr PVC K71, 33 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

EFFICIENCY

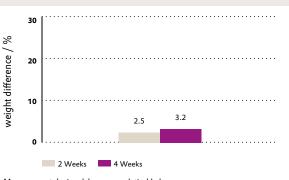
VESTINOL® 9 is a highly efficient plasticizer.



Measurement device: Shore hardness A, digital hardness tester Parameter: DIN ISO 48-4, storage min 16 h at 23 °C, 50 % humidity Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

MIGRATION INTO PVC-U

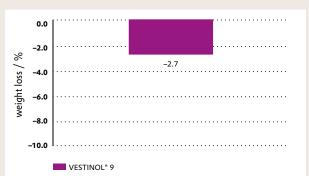
VESTINOL® 9 shows a very low migration tendency into rigid PVC.



Measurement device: lab oven, analytical balance Parameter: weight difference, DIN EN ISO 177, 70 °C Formulation: 100 phr PVC K71, 33 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

VOLATILITY

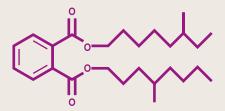
Products with VESTINOL® 9 exhibit low emission.



Measurement device: lab oven, analytical balance Parameter: weight decrease, DIN EN ISO 176 Method B, 3 days 120 °C Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

REGULATORY SNAPSHOT

- Excellent safety profile
- Further information in our regulatory onepager



di-isononyl phthalate (DINP)

Disclaimer

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ELATUR[®] CH

Flexibility. The purpose defines the choice.

ELATUR[®] CH (DINCH) is a modern, low-viscosity plasticizer with excellent cold flexibility and very good migration properties especially suitable for ELATUR[®] CH (DINCH)

APPLICATIONS

• Plasticizer for PVC

sensitive applications.

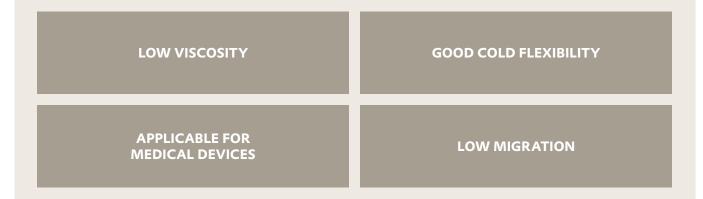
- Adhesives & Sealants
- Coatings & Paints

SPECIAL OFFERINGS

- Special packaging available
- Life-cycle assessment data available

PERFORMANCE AT A GLANCE

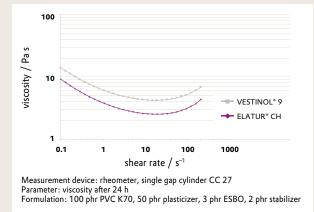
- · Excellent low viscosity and aging
- Very good migration properties
- Excellent cold flexibility
- High UV stability



PROCESSING PERFORMANCE

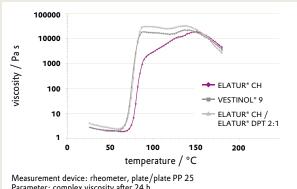
VISCOSITY

Plastisols with ELATUR® CH show excellent processing viscosity.



GELATION

 ELATUR° CH exhibits sufficient fusion speed, which can be increased with ELATUR° DPT.

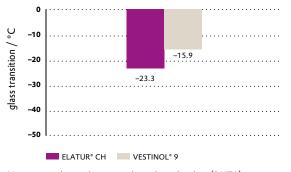


Parameter: complex viscosity after 24 h Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer



COLD FLEXIBILITY

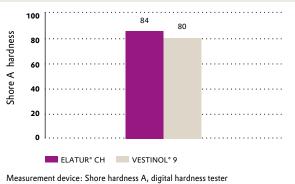
Products with ELATUR[®] CH show outstanding low temperature flexibility.



Measurement device: dynamic mechanic thermal analysis (DMTA) Parameter: Evonik method, glass transition temperature Tg Formulation: 100 phr PVC K71, 33 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

EFFICIENCY

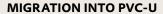
Products with ELATUR[®] CH show very good plasticizing efficiency.



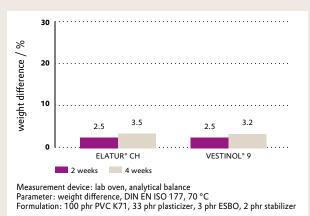
Measurement device: Shore hardness A, digital hardness tester Parameter: DIN ISO 48-4, storage min 16 h at 23 °C, 50 % humidity Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

REGULATORY SNAPSHOT

- Excellent safety profile
- included in European Pharmacopoeia of the European Directorate for the Quality of Medicines & HealthCare (EDQM)

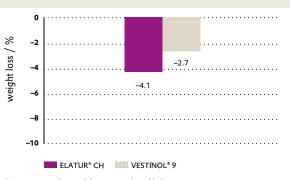


ELATUR[®] CH shows a very low migration tendency into rigid PVC.

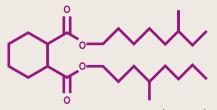


VOLATILITY

ELATUR® CH exhibits a good emission profile.



Measurement device: lab oven, analytical balance Parameter: weight decrease, DIN EN ISO 176 Method B, 3 days 120 °C Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer



di-isononyl cyclohexanoate (DINCH)

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ELATUR® DPT

Speed. The power makes the difference.

ELATUR® DPT is a fast fusing, low-viscosity plasticizer with very good emission profile and high gelation power preferably used for manufacturing of PVC plastisols.

ELATUR[®] DPT

APPLICATIONS

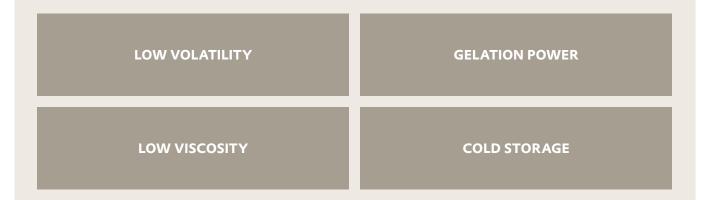
- Plasticizer for PVC
- Adhesives & Sealants
- Coatings & Paints

SPECIAL OFFERINGS

- Special packaging available
- Life-cycle assessment data available

PERFORMANCE AT A GLANCE

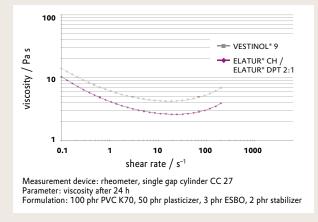
- Outstanding gelation power and efficiency
- Excellent cold storage properties
- Low viscosity and aging
- High plasticizing efficiency
- Very low SVOC (semi-volatile organic compounds) content



PROCESSING PERFORMANCE

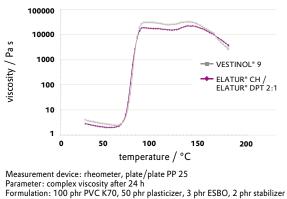
VISCOSITY

Plastisols with ELATUR® DPT exhibit low viscosity.



GELATION

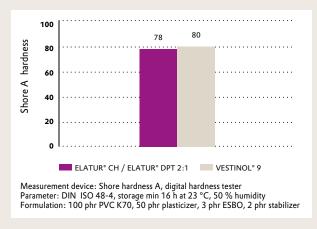
ELATUR® DPT offers a high gelation power, strongly accelerating general purpose plasticizers.





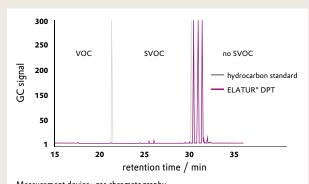
EFFICIENCY

ELATUR® DPT exhibits a very high plasticizing efficiency.



SEMI-VOLATILE ORGANIC COMPOUNDS

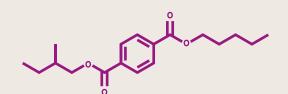
ELATUR® DPT contains max. 1 % SVOC.



Measurement device: gas chromatography Parameter: peak position (DIN EN 16516, DIN EN 16000-6 mod.) Formulation: pure plasticizer

REGULATORY SNAPSHOT

• Excellent safety profile



di-isopentyl terephthalate (DPT)

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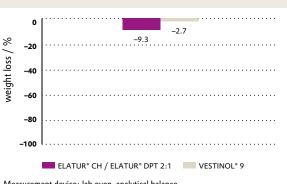
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VOLATILITY

ELATUR[®] DPT is a fast fuser with a balanced emission profile and low SVOC content.



Measurement device: lab oven, analytical balance Parameter: weight decrease, DIN EN ISO 176 Method B, 3 days 120 °C Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

ELATUR® DINCD

Resistance. The toughest for all needs.

ELATUR® DINCD is an innovative low-viscosity plasticizer with excellent cold flexibility and very low volatility especially suitable for demanding applications.

ELATUR® DINCD

APPLICATIONS

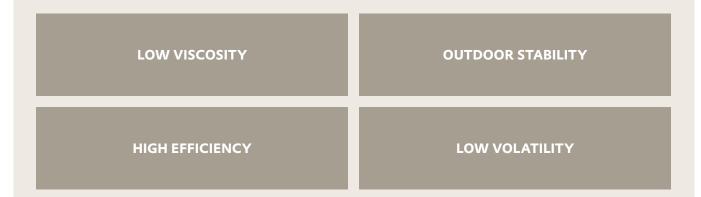
- Plasticizer for PVC
- Adhesives & Sealants
- Coatings & Paints

SPECIAL OFFERINGS

- Special packaging available
- Life-cycle assessment data available

PERFORMANCE AT A GLANCE

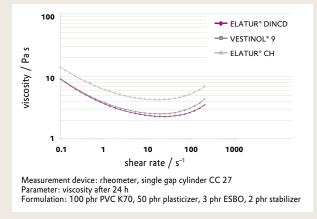
- Excellent low viscosity and aging
- · Low volatility
- Excellent cold flexibility
- High UV stability



PROCESSING PERFORMANCE

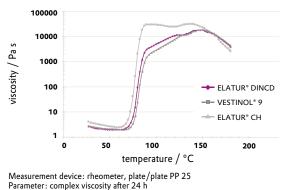
VISCOSITY

Plastisols with ELATUR® DINCD show excellent processing viscosity.



GELATION

ELATUR® DINCD exhibits a good gelation profile.

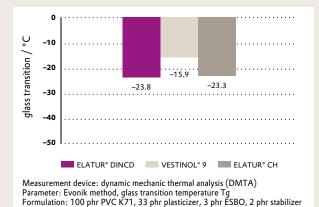


Parameter: complex viscosity after 24 h Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer



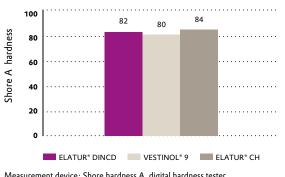
COLD FLEXIBILITY

Products with ELATUR® DINCD show superior low temperature flexibility.



EFFICIENCY

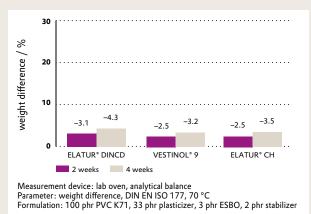
Products with ELATUR® DINCD show high efficiency.



Measurement device: Shore hardness A, digital hardness tester Parameter: DIN ISO 48-4, storage min 16 h at 23 °C, 50 % humidity Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

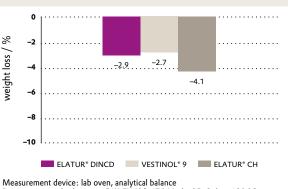
MIGRATION INTO PVC-U

ELATUR® DINCD shows a low migration tendency into rigid PVC.



VOLATILITY

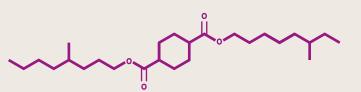
ELATUR® DINCD exhibits an excellent emission profile.



Parameter : weight decrease, DIN KN ISO 176 Method B, 3 days 120 °C Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

REGULATORY SNAPSHOT

· Excellent safety profile



di-isononyl-1,4-cyclohexane dicarboxylate (DINCD)

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EVONIK OPERATIONS GMBH Performance Intermediates Business Line Oxo Alcohols & Plasticizers

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