Plasticizers

Evonik product portfolio

EVONIK
Leading Beyond Chemistry

C4-CHEMICALS FROM EVONIK: **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

ELATUR® TM is a specialty plasticizer with an excellent migration profile and very low volatility especially suitable for applications where low emissions are needed.
Learn more

Plasticizers from Evonik ↗

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.

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

FAST GELATION

OUTDOOR STABILITY

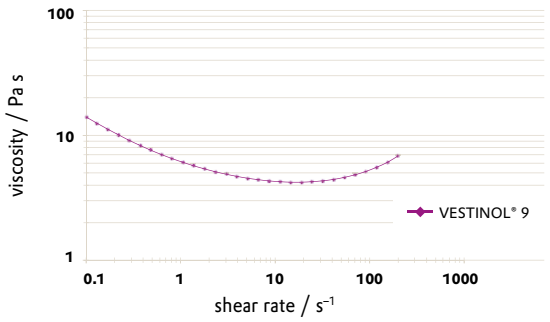
LOW VOLATILITY

HIGH EFFICIENCY

PROCESSING PERFORMANCE

VISCOSITY

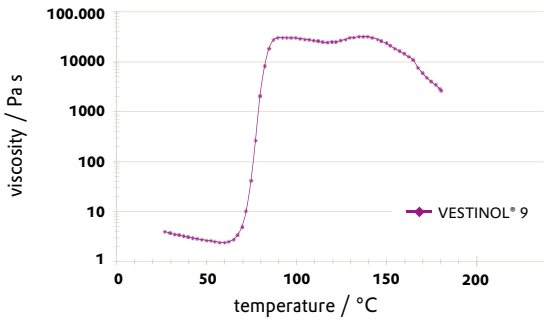
Plastisols with VESTINOL® 9 show a very good viscosity profile.



Measurement device: rheometer, single gap cylinder CC 27
Parameter: viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

GELATION

VESTINOL® 9 offers a high fusion speed.



Measurement device: rheometer, plate/plate PP 25
Parameter: complex viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

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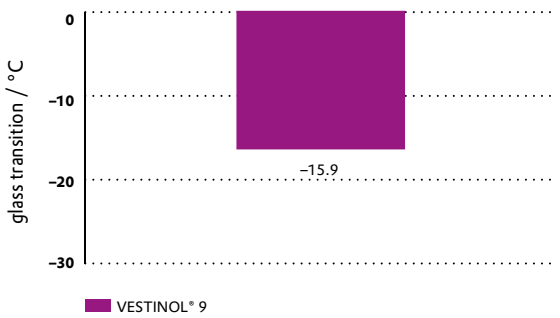
TECHNICAL PERFORMANCE

COLD FLEXIBILITY

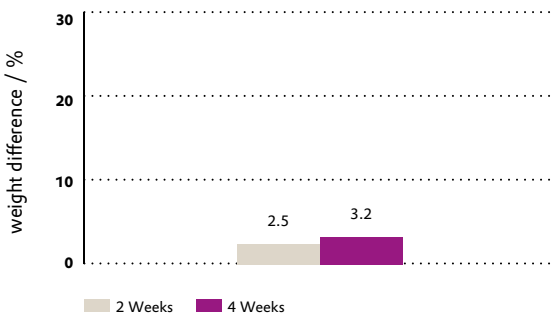
Products with VESTINOL® 9 show excellent low temperature flexibility.



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

MIGRATION INTO PVC-U

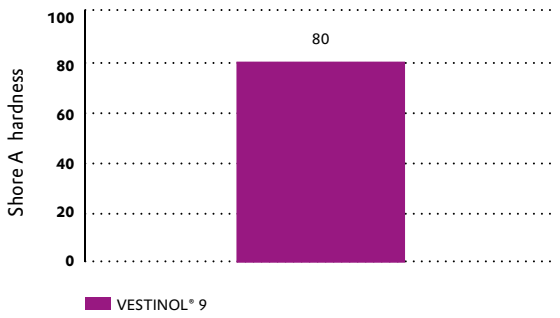
VESTINOL® 9 shows a very low migration tendency into rigid PVC.



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

EFFICIENCY

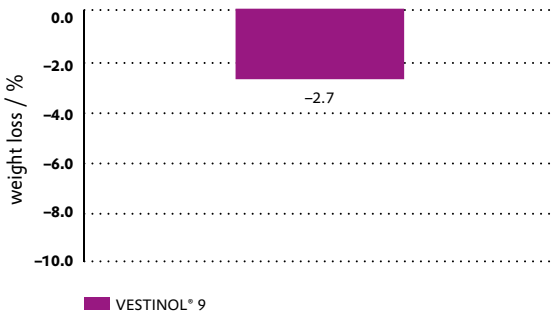
VESTINOL® 9 is a highly efficient plasticizer.



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

VOLATILITY

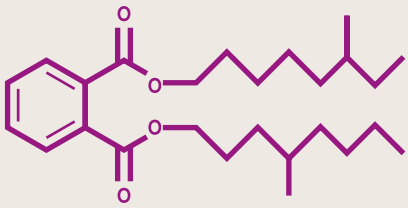
Products with VESTINOL® 9 exhibit low emission.



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)

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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 sensitive applications.

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
- Very good migration properties
- Excellent cold flexibility
- High UV stability

LOW VISCOSITY

GOOD COLD FLEXIBILITY

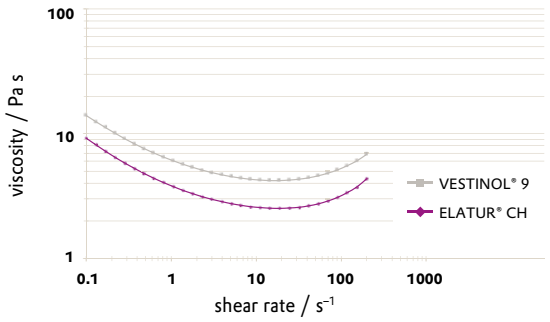
APPLICABLE FOR MEDICAL DEVICES

LOW MIGRATION

PROCESSING PERFORMANCE

VISCOSITY

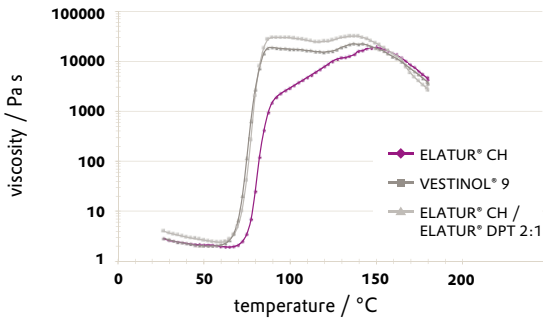
Plastisols with ELATUR® CH show excellent processing viscosity.



Measurement device: rheometer, single gap cylinder CC 27
Parameter: viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

GELATION

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



Measurement device: rheometer, plate/plate PP 25
Parameter: complex viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

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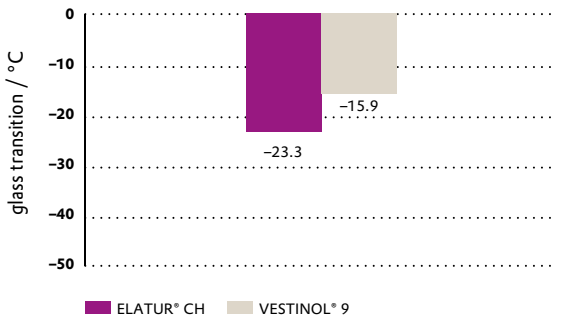
TECHNICAL PERFORMANCE

COLD FLEXIBILITY

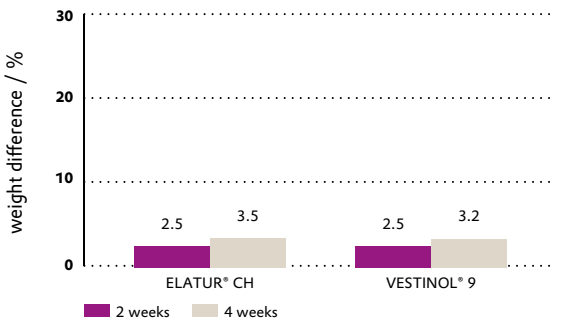
Products with ELATUR® CH show outstanding low temperature flexibility.



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

MIGRATION INTO PVC-U

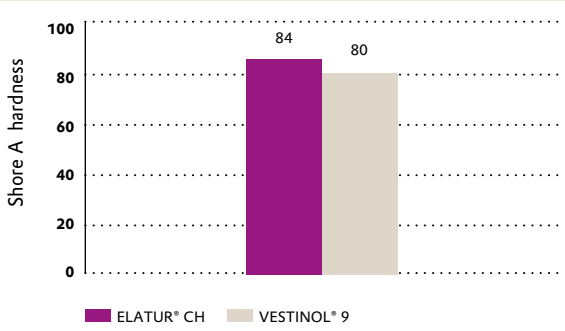
ELATUR® CH shows a very low migration tendency into rigid PVC.



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

EFFICIENCY

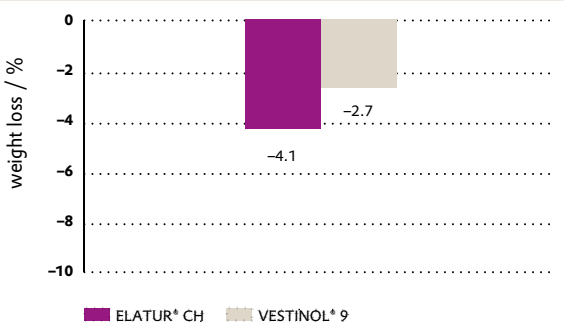
Products with ELATUR® CH show very good plasticizing efficiency.



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

VOLATILITY

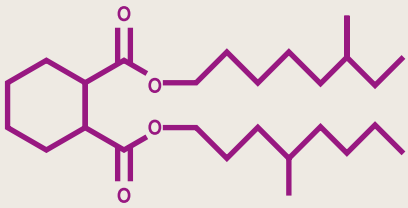
ELATUR® CH exhibits a good emission profile.



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

REGULATORY SNAPSHOT

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



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.

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

LOW VOLATILITY

GELATION POWER

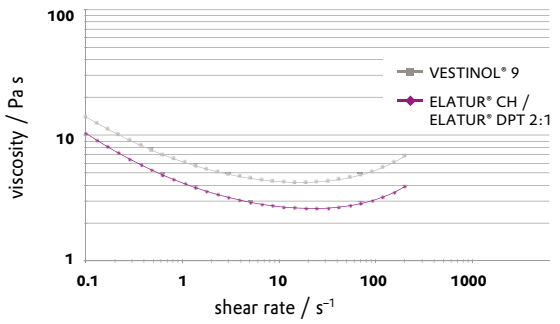
LOW VISCOSITY

COLD STORAGE

PROCESSING PERFORMANCE

VISCOSITY

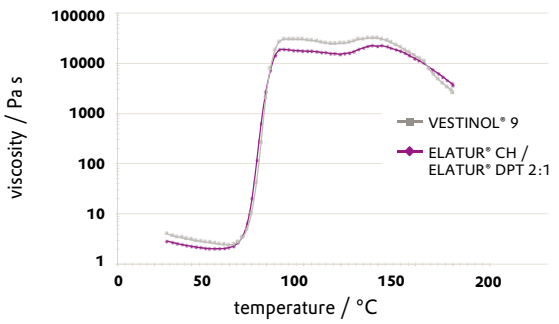
Plastisols with ELATUR® DPT exhibit low viscosity.



Measurement device: rheometer, single gap cylinder CC 27
Parameter: viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

GELATION

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



Measurement device: rheometer, plate/plate PP 25
Parameter: complex viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

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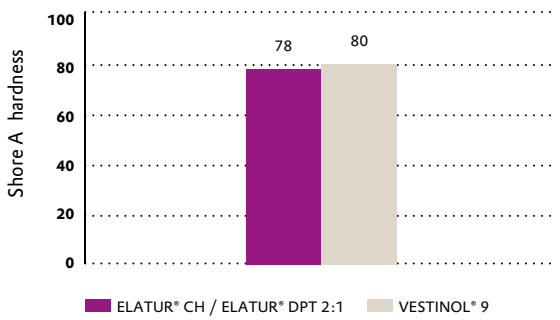
TECHNICAL PERFORMANCE

EFFICIENCY

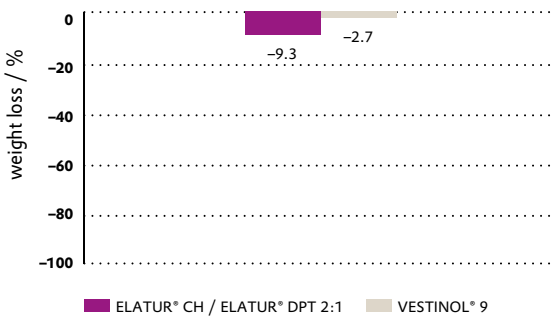
ELATUR® DPT exhibits a very high plasticizing efficiency.



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

VOLATILITY

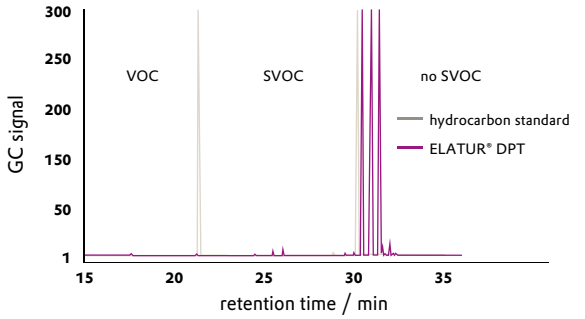
ELATUR® DPT is a fast fuser with a balanced emission profile and low SVOC content.



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

SEMI-VOLATILE ORGANIC COMPOUNDS

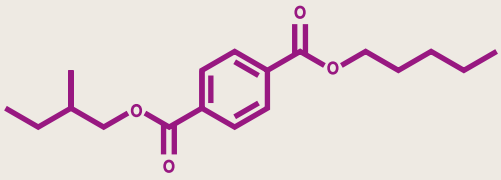
ELATUR® DPT contains max. 1 % SVOC.



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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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.

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

LOW VISCOSITY

OUTDOOR STABILITY

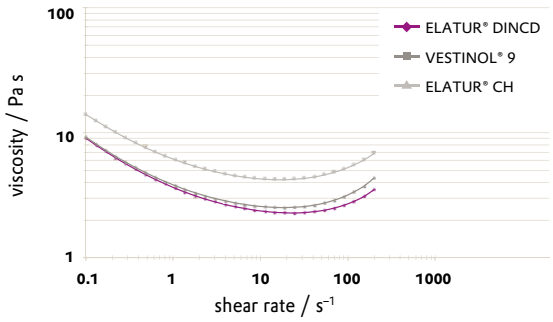
HIGH EFFICIENCY

LOW VOLATILITY

PROCESSING PERFORMANCE

VISCOSITY

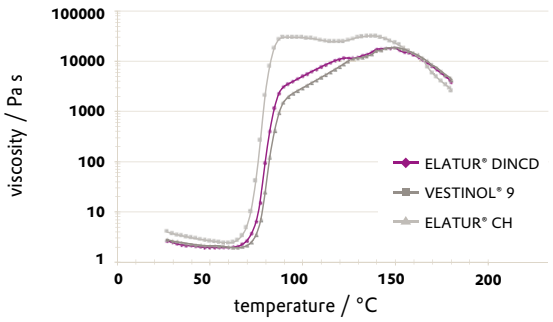
Plastisols with ELATUR® DINCD show excellent processing viscosity.



Measurement device: rheometer, single gap cylinder CC 27
Parameter: viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

GELATION

ELATUR® DINCD exhibits a good gelation profile.



Measurement device: rheometer, plate/plate PP 25
Parameter: complex viscosity after 24 h
Formulation: 100 phr PVC K70, 50 phr plasticizer, 3 phr ESBO, 2 phr stabilizer

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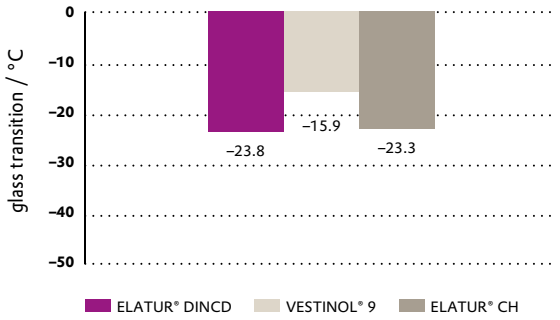
TECHNICAL PERFORMANCE

COLD FLEXIBILITY

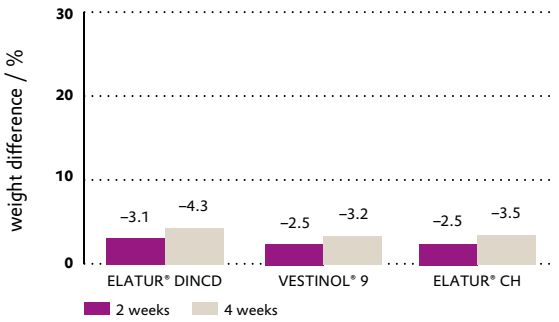
Products with ELATUR® DINCD show superior low temperature flexibility.



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

MIGRATION INTO PVC-U

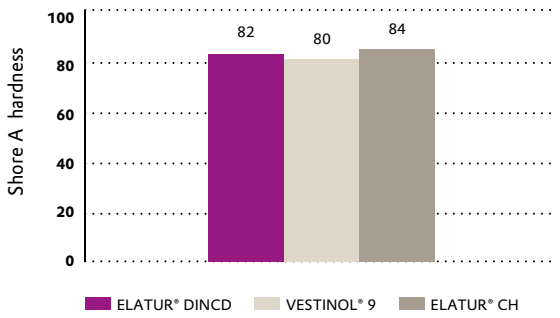
ELATUR® DINCD shows a low migration tendency into rigid PVC.



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

EFFICIENCY

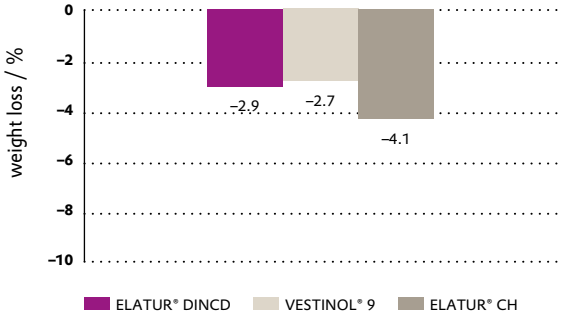
Products with ELATUR® DINCD show high efficiency.



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

VOLATILITY

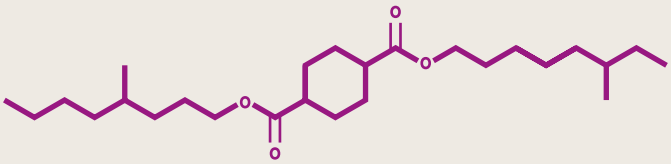
ELATUR® DINCD exhibits an excellent emission profile.



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

REGULATORY SNAPSHOT

- Excellent safety profile



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

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ELATUR® TM

Stability. Heat resistance at its perfection.

ELATUR® TM is a specialty plasticizer with an excellent migration profile and very low volatility especially suitable for applications where low emissions are needed.

APPLICATIONS

- Specialty plasticizer for PVC
- Automotive applications, e.g. artificial leather
- High temperature cables

SPECIAL OFFERINGS

- Special packaging available

PERFORMANCE AT A GLANCE

- High temperature resistance
- Extremely low volatility
- Migration Resistance
- Good cold flexibility

HIGH TEMPERATURE RESISTANCE

MIGRATION RESISTANCE

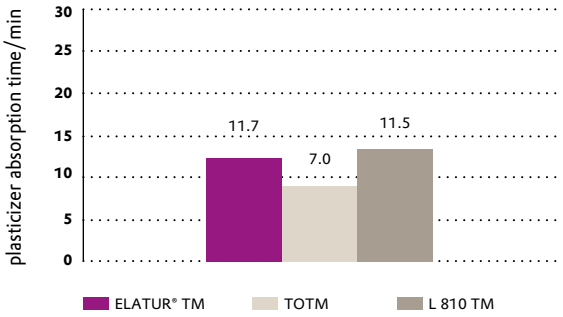
LOW FOGGING

EXTREMLY LOW VOLATILITY

PROCESSING PERFORMANCE

ABSORPTION

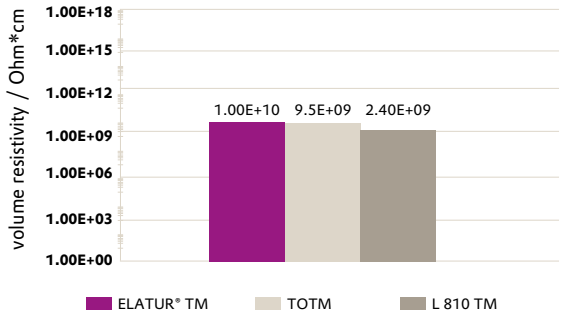
Dryblends with ELATUR® TM show slightly higher plasticizer absorption times due to higher molecular weight of the plasticizer.



Measurement device: planetary mixer
Parameter: absorption time at 88 °C
Formulation: 100 phr PVC K71, 50 phr plasticizer, 20 phr filler, 10 phr stabilizer

ELECTRICAL INSULATION CHARACTERISTICS ACCORDING TO DIN EN 62631-3-1

ELATUR® TM shows very good electrical insulation properties at elevated temperatures.



Measurement device: annular electrode out of conductive silver, 49.02 cm²
Parameter: volume resistivity at 70 °C
Formulation: 100 phr PVC K71, 50 phr plasticizer, 20 phr filler, 10 phr stabilizer

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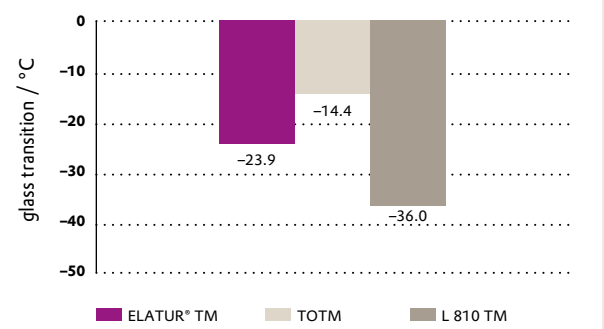
TECHNICAL PERFORMANCE

COLD FLEXIBILITY

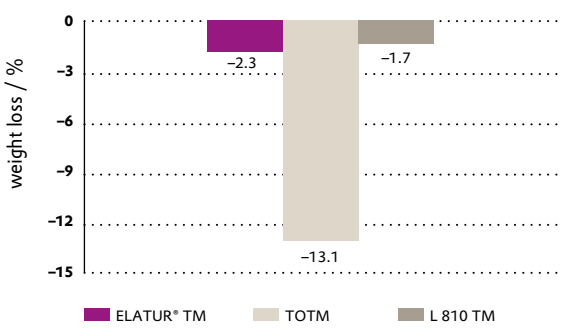
Products with ELATUR® TM show an improved temperature flexibility.



Measurement device: dynamic mechanic thermal analysis (DMTA)
Parameter: Evonik method, glass transition temperature T_g
Formulation: 100 phr PVC K71, 50 phr plasticizer, 20 phr filler, 10 phr stabilizer

VOLATILITY

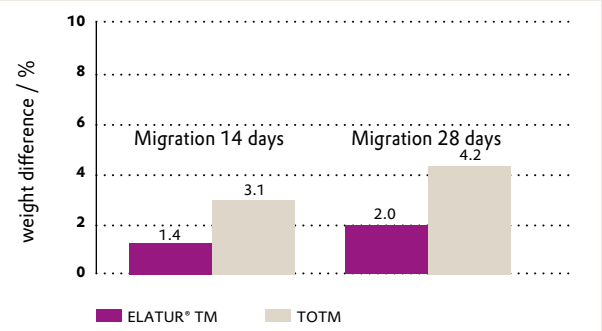
ELATUR® TM shows extremely low volatility at high temperatures.



Measurement device: lab oven, analytical balance
Parameter: weight decrease, 21 days ,135 °C
Formulation: 100 phr PVC K71, 50 phr plasticizer, 20 phr filler, 10 phr stabilizer

MIGRATION INTO PVC-U

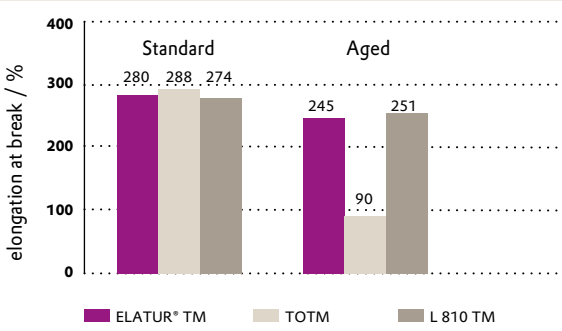
ELATUR® TM shows an improved migration resistance into rigid PVC.



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

MECHANICAL PROPERTIES

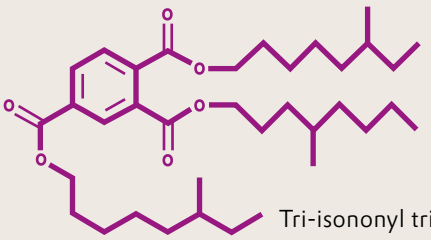
ELATUR® TM shows good mechanical resistance in aged samples at high temperatures.



Measurement device: tensile testing machine, lab oven, analytical balance
Parameter: standard: after 1 day, 23 °C; aged: after 21 days , 135 °C
Formulation: 100 phr PVC K71, 50 phr plasticizer, 20 phr filler, 10 phr stabilizer

REGULATORY SNAPSHOT

- Excellent safety profile



Tri-isononyl trimellitate (TINTM)

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