DEUREX X 52 G

TECHNICAL INFORMATION

Chemical description: Bio-based Sugar cane wax

Benefits:
- Natural wax from renewable raw materials with a very attractive price-performance ratio
- Replacement of previously used fossil wax products in many applications
- No seasonal fluctuations in availability (as carnauba or montanic waxes)
- 100% Bio-based wax (DIN EN 16640)

Applications:

PVC and other plastics
- Can be used in all U-PVC and P-PVC applications but also in C-PVC

DEUREX X 52 is the best choice of lubricant especially in combination with calcium-zinc and tin stabilizers for rigid PVC products like window profiles, technical profiles, pipes and fittings.

Properties:

Internal and external wax, highly effective wax
- Delays fusion
- Decreases torque, pressure and melt viscosity
- Mold release agent
- Improves gloss in U-PVC especially in window profile applications
- Useful for high speed cable extrusion

Typical dosages: Depending on the rheological requirements:
- up to 0.2 phr for PVC and C-PVC

Technical data:

Colour: Amber
Delivery forms: **DEUREX X 52 G** = Granules

	Minimum	Maximum	Method
Drop point*:	72 °C	82 °C	ASTM D 3954
Acid value:	20 mg KOH/g	30 mg KOH/g	ASTM D 1386
Viscosity (140 °C):		60 mPas	ISO 3219
Penetration:	3.0 mm*10^{-1}	10.0 mm*10^{-1}	ASTM D 1321
Density (23 °C):	0.80 g/cm³	0.85 g/cm³	ISO 1183

* Part of certificate of analysis
Sugar cane waxes are natural products. Physical properties are subject to slight variations.

Alternative products: See **https://www.deurex.com/productsearch/DEUREX-X-52-G/**

This data sheet is based on our current knowledge and experience. In view of the individual factors that may affect processing and application, this data does not relieve users from the responsibility of carrying out their own tests and experiments, neither do they imply any legally binding assurance of certain properties. Existing industrial/commercial protective laws have to be considered by the recipient. Updated versions of the data sheet replace all formerly existing versions.

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DEUREX X 52 G

DEUREX X 52 G was investigated in a calcium-zinc stabilized window profile formulation containing:

- 100 phr S-PVC (k=67)
- 6 phr coated calcium carbonate, window profile grade
- 4 phr titanium dioxide, rutile, window profile grade
- 6 phr acrylic impact modifier
- 2.6 phr calcium-zinc stabilizer

The dry blends were mixed up to 120°C in a high speed hot mixer and cooled down to 45°C. After a relaxation time of >12 hours the dry blend was extruded on a parallel twin screw extruder KMD 35-26. The results are summarized in chart 1.

Chart 1:

Raw material	T1	T2	T3	T4
Lubpack	0,55			
DEUREX X 52		0,55		
Wax E			0,55	
Complex ester				0,55
Fusion time [s]	75	95	97	115
Extrusion torque [Nm]	67	65	66	67
Melt pressure [bar]	186	184	180	165
Gloss [%]	32	59	64	51

Conclusion: It was found that DEUREX X 52 is an excellent alternative in its influence on rheology compared to montanic ester type wax E but also to complex esters both in window profile and fitting applications.

Furthermore, montanic ester type wax E has limited availability due to the plant exit of brown coal in Germany.

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