DEUREX®
THE WAX COMPANY

DEUREX® X 20 K

TECHNICAL INFORMATION

Chemical description: Bio-based N,N'-Ethylene bis stearamide (EBS), plant based

Benefits:
- On the basis of stearic acid from the sugar cane plant
- Temperature stable
- Lighter color compared to all other amide waxes
- No influence on transparency, nearly odorless

Applications:

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

DEUREX® X 20 K is a special development for applications that require high gloss. It is the best choice of lubricants in combination with calcium-zinc and especially tin stabilizers for rigid PVC products like window profiles.

Properties:

External & internal wax, highly effective wax
- Between internal and external lubricant with anti-blocking, anti-tacking, anti-sticking and anti-static effect
- Mold release agent, slip agent
- Improves gloss in U-PVC especially in window profile applications
- Improves surface resistance to salt, heat, moisture and most solvents
- Very useful in combination with tin stabilizers
- Might reduce thermal stability when overdosed
- Dust free

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

Technical data:

Colour: White
Delivery form: **DEUREX® X 20 K** = Fine granules

	Minimum	Maximum	Method
Drop point*:	142 °C	151 °C	LV 12 (DGF M-III 3)
Acid value*:		5 mg KOH/g	DIN EN ISO 2114
Viscosity (160 °C):		20 mPas	LV 2 (DIN EN ISO3104)
Penetration:	1.0 mm*10^{-1}	3.0 mm*10^{-1}	LV 4 (DIN 51579)
Density (23 °C):	0.98 g/cm³	1.00 g/cm³	LV 3 (DIN EN ISO 1183)

* Part of certificate of analysis

Approvals:

EU: Regulation (EU) 10/2011 dated 14. January 2011 – Ref.-No.: 80000
USA: FDA 21 CFR §§ 175.105, 175.300, 175.320,175.380, 175.390, 176.170, 176.180, 177.1200, 177.1210, 177.1350, 177.1400, 177.2470, 177.2480, 178.3860, 179.45, 181.28
(Approvals with regard to limitations and migration values in the final application)

Alternative delivery form:

DEUREX® X 2010 M – Micronized powder, 98% < 10 µm
DEUREX® X 20 A – Finest powder, 98% < 150 µm

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DEUREX® X 20 K was investigated in a Calcium-Zinc stabilized window profile formulation containing:

- 100 phr S-PVC (k=67)
- 10 phr coated Calcium carbonate, window profile grade
- 4 phr Titanium dioxide, Rutile, window profile grade
- 6 phr Acrylic impact modifier
- 3 phr Calcium-Zinc stabiliser

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 Fig. 1 to Fig. 4. It was also found that **DEUREX® X 20 K** is very similar to equal in its influence on rheology compared to a standard N,N'-Ethylene bis stearamide wax.

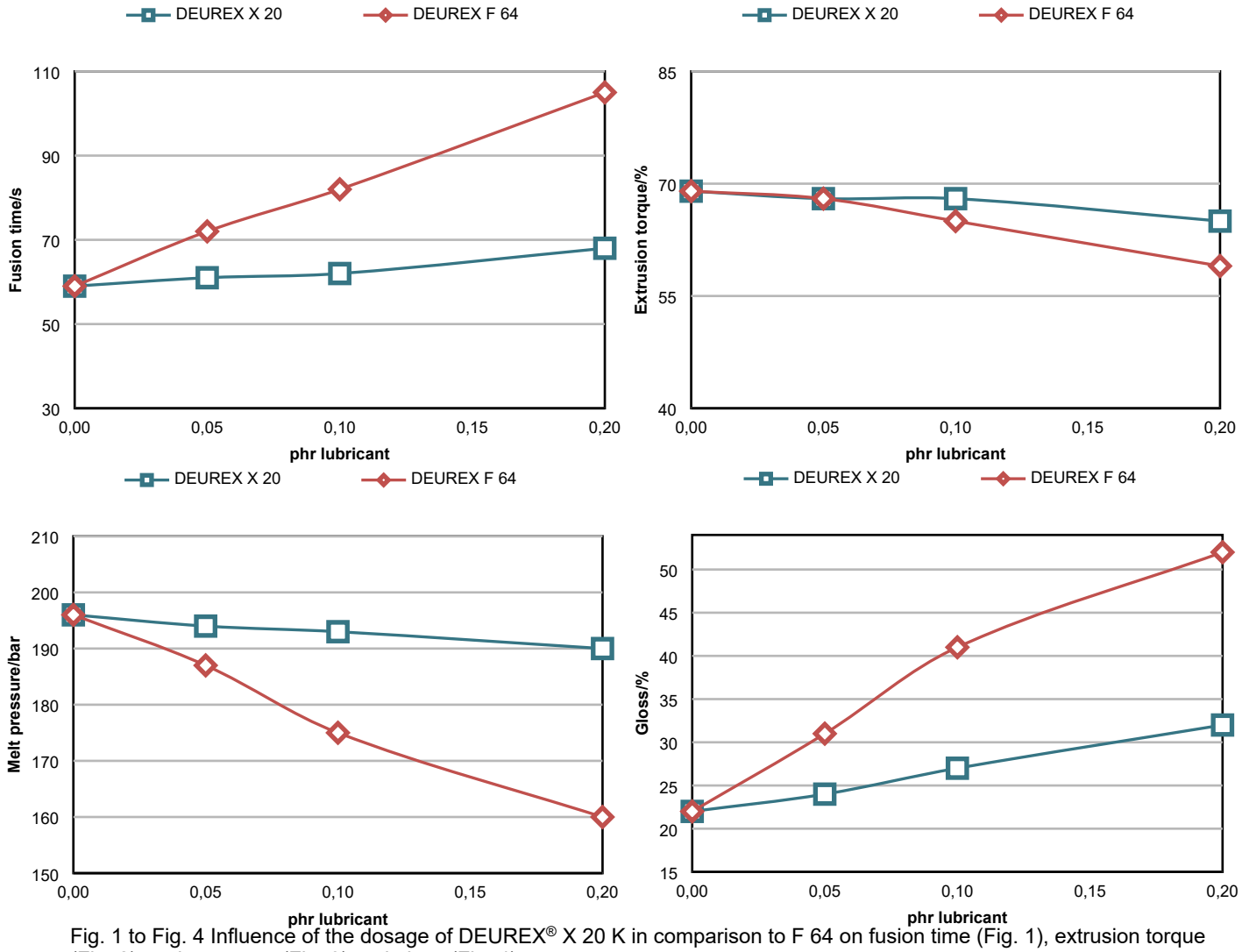

Fig. 1 to Fig. 4 Influence of the dosage of DEUREX® X 20 K in comparison to F 64 on fusion time (Fig. 1), extrusion torque (Fig. 2), melt pressure (Fig. 3) and gloss (Fig. 4)

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