

DEUREX[®]

THE WAX COMPANY



POLYETHYLENE WAXES

DEUREX[®] EWAX
POLYETHYLENE WAXES

SUGAR CANE WAXES

DEUREX[®] XWAX
SUGAR CANE WAXES

HYBRID WAXES

DEUREX[®] HWAX
HYBRID WAXES

PVC – POLYVINYL CHLORIDE

- Thermoplastics
- Processing temperature range 150 - 210 °C
- Main part of the thermal energy (up to 80 %) is generated rather by mechanical movement than by direct heating during preparation of PVC

APPLICATIONS

- Profiles, such as window profiles
- Pipes
- Flooring
- Rigid PVC sheets
- Packaging
- Platisol applications
- Soft PVC applications such as cable and films

BENEFITS OF ADDITIVES IN PVC

- PVC is hard and brittle without additives and thus difficult to process
- Additives
 - Are mainly plasticizers, stabilizers and impact modifiers
 - Facilitate processing of PVC and fit it to the wide variety of applications
 - Improve physical resistance against e.g. temperature, sun light, weather conditions
 - Improve toughness, elasticity and impact strength
 - Optimize gloss and other surface properties
 - Reduce the viscosity of the PVC melt and thus the processing temperature

DEUREX WAXES FOR PVC

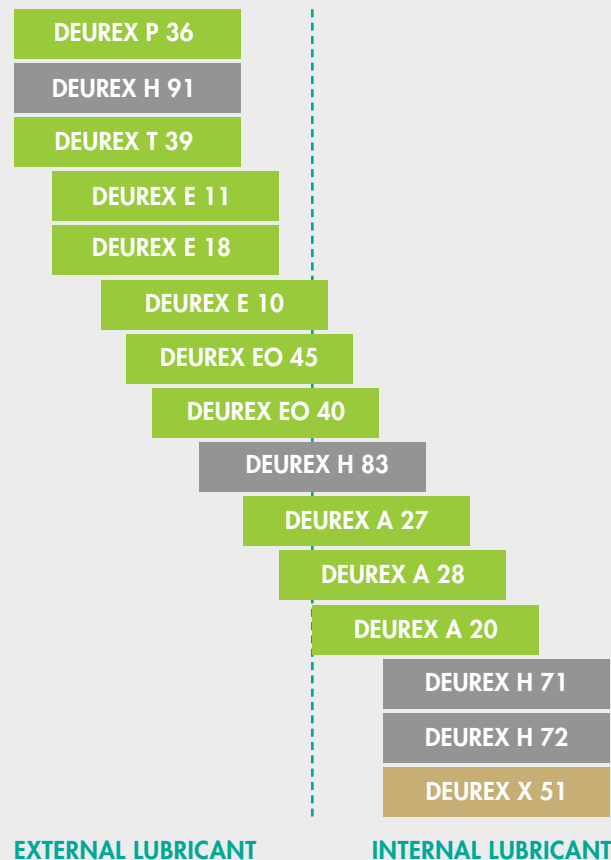
- Are very easy to incorporate
- Work as internal and external lubricant and reduce mechanical stress
- Reduce production costs of PVC products
- Amount of plasticizers can be reduced
- Improve impact resistance and plastic properties such as flexibility and softness of the hard PVC material
- Inert, chemically stable
- Release agents
- Extensive conservation of transparency without affecting the gelling behavior
- No volatile organic substances, positive in plastics processing on calenders and during degassing of polymers

DEUREX WAXES AS EXTERNAL LUBRICANTS

- Mostly non polar, unbranched waxes that can migrate very easily
- PVC components contain more wax particles on the surface than inside
- Glossy surface layer of PVC components due to wax
- Waxes reduce the adhesion between PVC and metal surfaces
- Release agent

DEUREX WAXES AS INTERNAL LUBRICANTS

- Polar waxes that show excellent compatibility with PVC even at high concentrations
- During thermoplastic processing waxes embed themselves between the molecular chains of PVC and loosen its structure
- DEUREX waxes also offer excellent transparency even at high dosages
- Welding, gluing and printing is not affected
- Facilitated processing due to reduced friction at the production tools
- Lower the melt viscosity
- Trapped gases migrate faster





DEUREX A 28 P



DEUREX E 11 K



DEUREX H 72

POLYETHYLENE WAXES

DEUREX E 11

- Bestseller for PVC
- Migrates very fast to the surface due to its linear and unbranched structure
- Stable against oxidation
- High color stability

DEUREX E 10

- Very economic PE wax for cost-sensitive products
- Migrates very fast to the surface due to its linear and unbranched structure

DEUREX E 18

- High viscous PE wax
- External lubricant

DEUREX EO 40

- Oxidized polyethylene wax
- For Zn-stabilized rigid PVC plastics
- Strong non-stick effect
- High transparency
- Use in film extrusion and injection moulding
- Regulation of gelling in Pb- and Ca-Zn-stabilized PVC systems

DEUREX EO 45

- Oxidized HDPE wax
- Increases viscosity
- Internal and external lubricant
- No metal adhesion
- Improved compatibility

AMIDE WAXES

DEUREX A 20

- Very temperature-stable
- Excellent anti-blocking
- Very good release agent for injection moulding
- Improves flow and internal lubrication during production of PVC

DEUREX A 27

- Alternative to phthalate ester and adipic ester

DEUREX A 28

- Alternative to phthalate ester, adipic ester and phosphoric ester

POLYPROPYLENE WAX

DEUREX P 36

- Strong external lubricant
- Less pressure in the extruder
- Very suitable to produce/extrude PVC pipes
- Regulation of gelling in Pb- and Ca-Zn-stabilized PVC systems

FISCHER-TROPSCH WAX

DEUREX T 39

- External lubricant
- Stable against oxidation
- High color stability
- Protects surface due to hardness and scratch resistance

SUGAR CANE WAX

DEUREX X 51

- Natural wax for the production of ecological products
- Internal lubricant for all PVC applications
- Even at high temperatures only low volatility due to long chain structure
- Amount of plasticizer can be reduced

HYBRID WAXES

DEUREX H 71

- Connects sugar cane wax and montanic wax
- Partly saponified with calcium hydroxide
- Internal lubricant
- Economic alternative to montanic wax

DEUREX H 72

- Connects sugar cane wax and montanic wax
- Partly esterified with ethylene glycol
- Internal lubricant
- Economic alternative to pure montanic wax

DEUREX H 83

- Connects sugar cane wax and polyethylene wax
- Internal and external lubricant
- High drop point
- Low acid value
- The perfect hybrid wax

DEUREX H 91

- Connects PE and FT wax
- Perfect for hard PVC applications
- External lubricant

All data are based on our current knowledge and inform about our products and their applications. There is no assurance for certain properties and their suitability for certain applications. The customer is responsible to care for the necessary safety measures and to ensure the appropriate handling of the product. Existing industrial property rights have to be considered. An unobjectionable quality is assured within the scope of our general terms and conditions. DEUREX_ENG_2015_03

	CHEMICAL DESCRIPTION	DROP POINT °C	ACID VALUE mg KOH/g	VISCOSITY mPas 140°C	PENETRATION dmm	DENSITY g/cm ³
DEUREX A 20	Ethylen-Bis-Stearamid wax	140 - 145	< 10	< 20 (160 °C)	1 - 3	0.98 - 1.00
DEUREX A 27	Oleamid wax	70 - 79	< 1	6 - 11	2 - 5	0.91 - 0.92
DEUREX A 28	Stearamid wax	101 - 111	< 5	7 - 12	2 - 8	0.90 - 0.91
DEUREX E 10	Non polar polyethylene wax	100 - 110	0	< 40	10 - 25	0.94 - 0.96
DEUREX E 11	Non polar polyethylene wax	110 - 120	0	< 80	3 - 7	0.94 - 0.96
DEUREX E 18	Non polar polyethylene wax	110 - 120	0	< 400	< 3	0.93 - 0.95
DEUREX EO 40	Oxidized polar polyethylene wax	97 - 105	< 19	< 120	5 - 15	0.93 - 0.96
DEUREX EO 45	Oxidized HDPE wax	130 - 140	< 30	< 4,000 (160 °C)	< 0.5	0.97 - 0.99
DEUREX P 36	Non polar polypropylene wax	150 - 170	0	130 - 230 (180 °C)	< 1	0.87 - 0.89
DEUREX T 39	Fischer-Tropsch wax	110 - 120	0	< 20	< 2	0.94 - 0.95
DEUREX X 51	Sugar cane wax	68 - 80	20 - 50	< 40	2 - 4	< 0.90
DEUREX H 71	Hybrid wax, sugar cane and montanic wax, partly saponified	85 - 95	15 - 25	< 100	1 - 2	0.92 - 0.95
DEUREX H 72	Hybrid wax, sugar cane wax and montanic wax	78 - 88	15 - 25	< 10	1 - 2	0.92 - 0.95
DEUREX H 83	Hybrid wax, sugar cane wax and polyethylene wax	90 - 110	5 - 10	< 20	5 - 10	0.90 - 0.93
DEUREX H 91	Hybrid wax, PE and FT wax	110 - 120	0	< 20	< 5	0.94 - 0.95