



ceronas



euroceras

# Rheological properties of CERALENE<sup>®</sup> and VISCOCER<sup>®</sup> waxes in rigid PVC applications

Get a plus

The additive evolution.



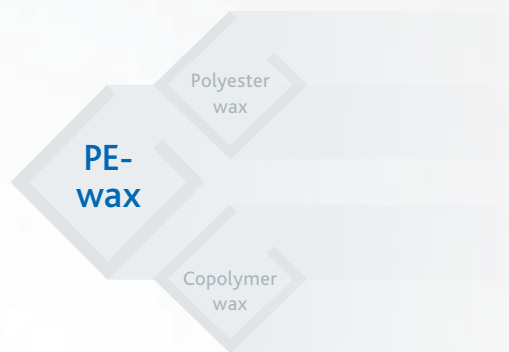
[www.ceronas.de](http://www.ceronas.de)

[www.euroceras.com](http://www.euroceras.com)

# CERALENE® non-oxidised polyethylene waxes

## Function:

- external lubrication
- reduced shear
- gloss improvement



## Non polar polyethylene waxes

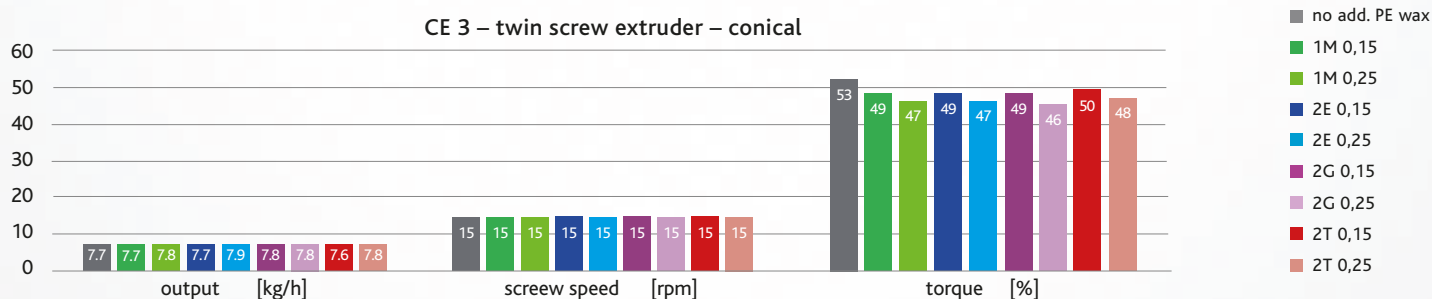
| CERALENE® grade | chem. description | acid value [mg KOH/g] | drop point [°C] | viscosity [mPa · s] at 120°C | density [g/cm³] at 23°C | penetration [mm · 10 <sup>-1</sup> ] at 25°C |
|-----------------|-------------------|-----------------------|-----------------|------------------------------|-------------------------|--|
| CERALENE® 1M    | LDPE wax          | 0                     | 104             | 240                          | 0.92                    | 3  |
| CERALENE® 2E    | LDPE wax          | 0                     | 106             | 550                          | 0.92                    | 2  |
| CERALENE® 2G    | LDPE wax          | 0                     | 109             | 140                          | 0.93                    | 3  |
| CERALENE® 2T    | LDPE wax          | 0                     | 109             | 1100                         | 0.92                    | 2  |

## CERALENE® PE-wax – rigid PVC – window profile – CaZn

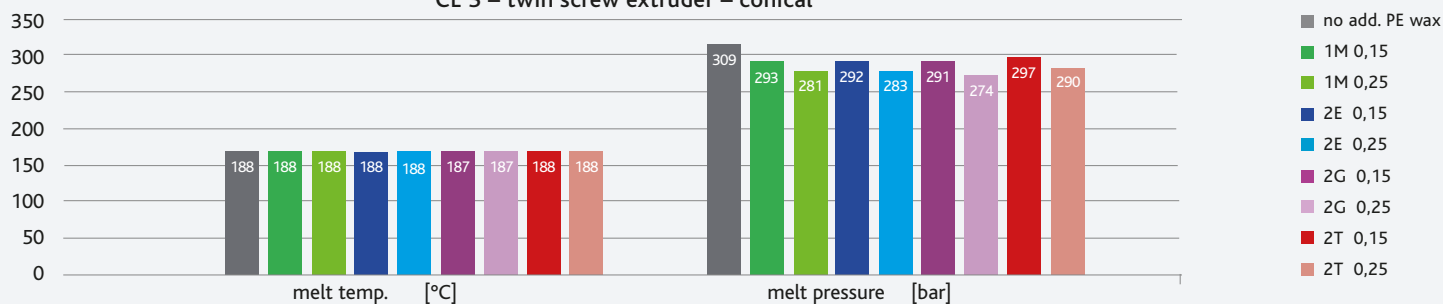
| formulation      | phr  |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|
| S-PVC KW 68      | 100  |      |      |      |      |      |      |      |      |
| Filler           | 10   |      |      |      |      |      |      |      |      |
| Impact modifier  | 6    |      |      |      |      |      |      |      |      |
| TiO <sub>2</sub> | 3.5  |      |      |      |      |      |      |      |      |
| Stabiliser CaZn  | 3.4  |      |      |      |      |      |      |      |      |
| CERALENE® 1M     |      | 0.15 | 0.25 |      |      |      |      |      |      |
| CERALENE® 2E     | none |      |      | 0.15 | 0.25 |      |      |      |      |
| CERALENE® 2G     |      |      |      |      |      | 0.15 | 0.25 |      |      |
| CERALENE® 2T     |      |      |      |      |      |      |      | 0.15 | 0.25 |

18 DVI

CE 3 – twin screw extruder – conical



CE 3 – twin screw extruder – conical



# CERALENE® non-oxidised polyethylene waxes

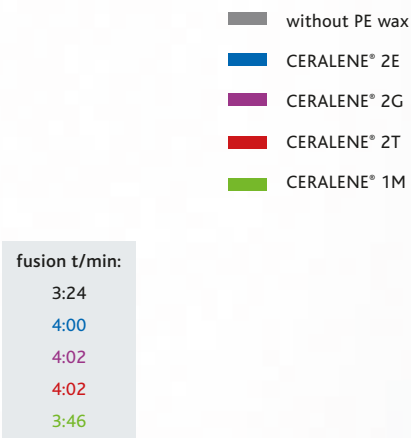
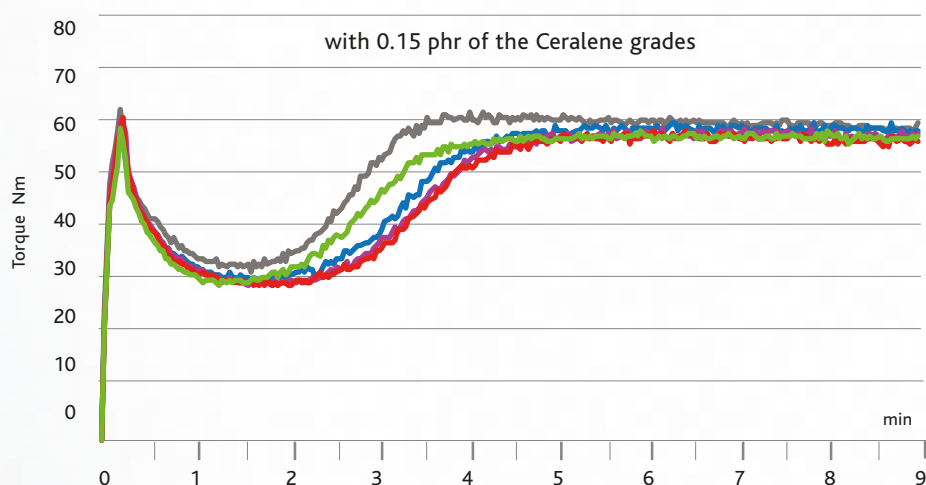


## CERALENE® – rigid PVC – window profile – CaZn

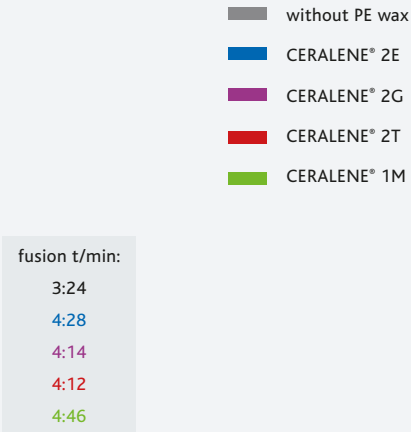
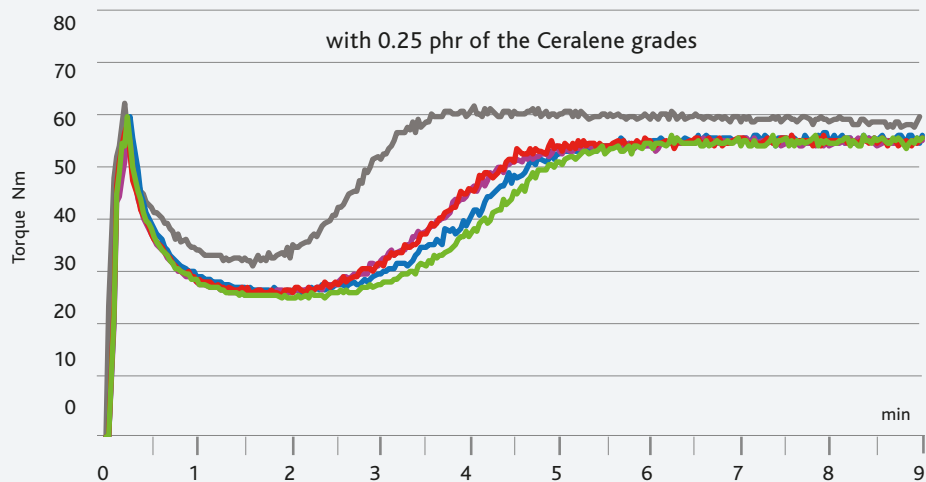
| formulation      | phr  |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|
| S-PVC KW 68      | 100  |      |      |      |      |      |      |      |      |
| Filler           | 10   |      |      |      |      |      |      |      |      |
| Impact modifier  | 6    |      |      |      |      |      |      |      |      |
| TiO <sub>2</sub> | 3.5  |      |      |      |      |      |      |      |      |
| Stabiliser CaZn  | 3.4  |      |      |      |      |      |      |      |      |
| CERALENE® 1M     |      | 0.15 | 0.25 |      |      |      |      |      |      |
| CERALENE® 2E     | none |      |      | 0.15 | 0.25 |      |      |      |      |
| CERALENE® 2G     |      |      |      |      |      | 0.15 | 0.25 |      |      |
| CERALENE® 2T     |      |      |      |      |      |      |      | 0.15 | 0.25 |

18 DVI

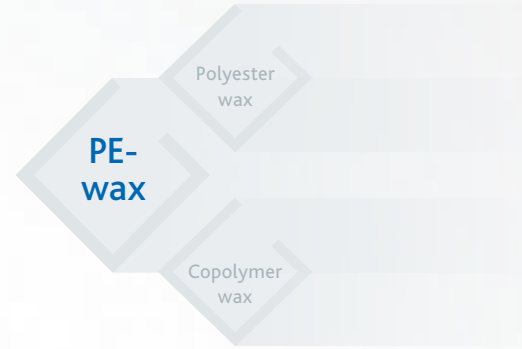
### Brabender



### Brabender



# CERALENE® non-oxidised polyethylene waxes

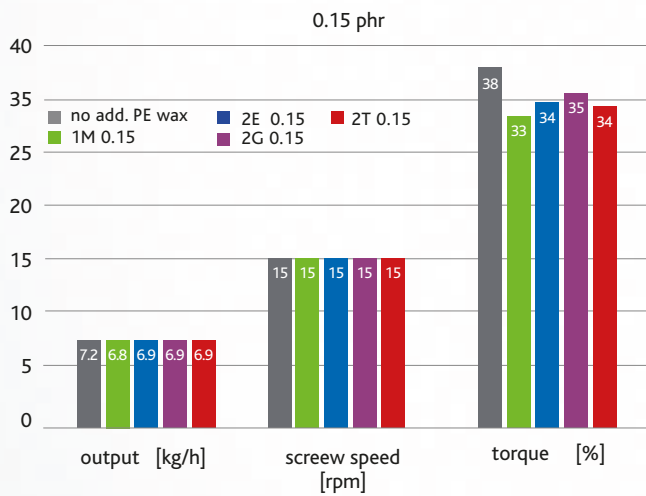


## CERALENE® – rigid PVC – window profile – CaZn

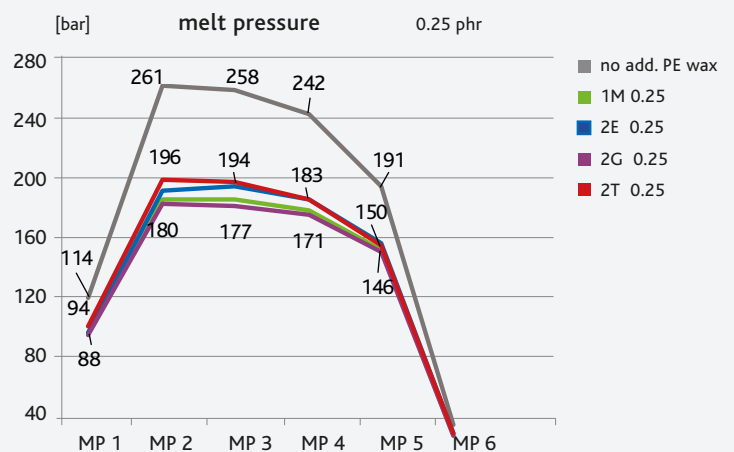
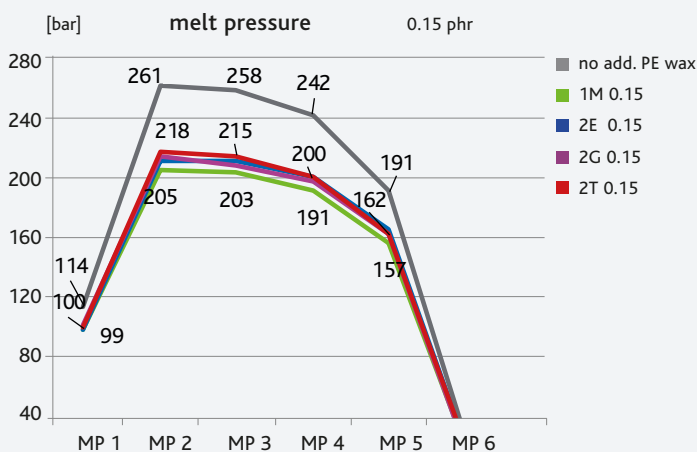
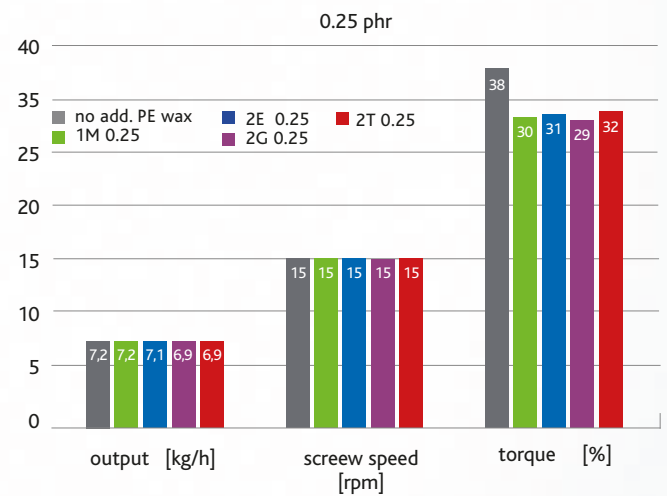
| formulation      | phr  |      |      |      |      |      |      |           |
|------------------|------|------|------|------|------|------|------|-----------|
| S-PVC KW 68      | 100  |      |      |      |      |      |      |           |
| Filler           | 10   |      |      |      |      |      |      |           |
| Impact modifier  | 6    |      |      |      |      |      |      |           |
| TiO <sub>2</sub> | 3.5  |      |      |      |      |      |      |           |
| Stabiliser CaZn  | 3.4  |      |      |      |      |      |      |           |
| CERALENE® 1M     |      | 0.15 | 0.25 |      |      |      |      |           |
| CERALENE® 2E     | none |      |      | 0.15 | 0.25 |      |      |           |
| CERALENE® 2G     |      |      |      |      |      | 0.15 | 0.25 |           |
| CERALENE® 2T     |      |      |      |      |      |      |      | 0.15 0.25 |

18 DVI

Collin – single screw extruder [30 mm / 25 D]



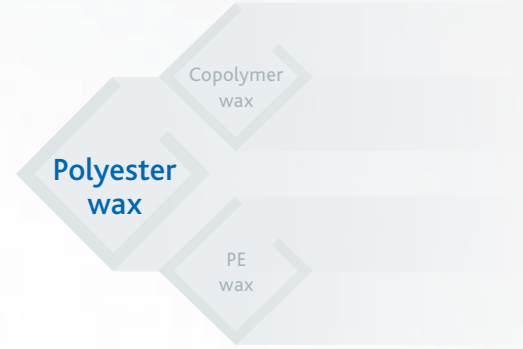
Collin – single screw extruder [30 mm / 25 D]



# CERALENE® polyester waxes

## Function:

- mainly internal
- nearly neutral regarding fusion
- low volatility and no plate out
- similar properties like montan waxes



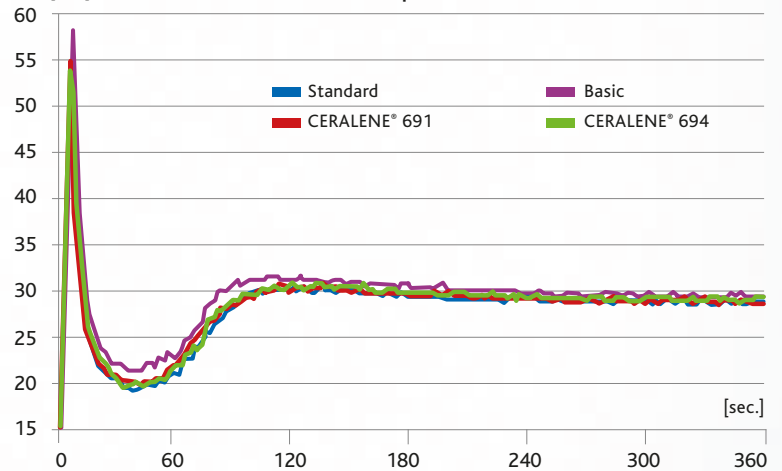
## CERALENE® 691 / CERALENE® 694

| CERALENE® grade | chem. description | acid value [mg KOH/g] | drop point [°C] | viscosity [mPa · s] at 120°C | density [g/cm³] at 23°C | penetration [mm · 10 <sup>-1</sup> ] at 25°C |
|-----------------|-------------------|-----------------------|-----------------|------------------------------|-------------------------|--|
| CERALENE® 691   | Polyester wax     | 10                    | 70              | 130                          | 0.97                    | 3  |
| CERALENE® 694   | Polyester wax     | 19                    | 70              | 170                          | 0.97                    | 3  |

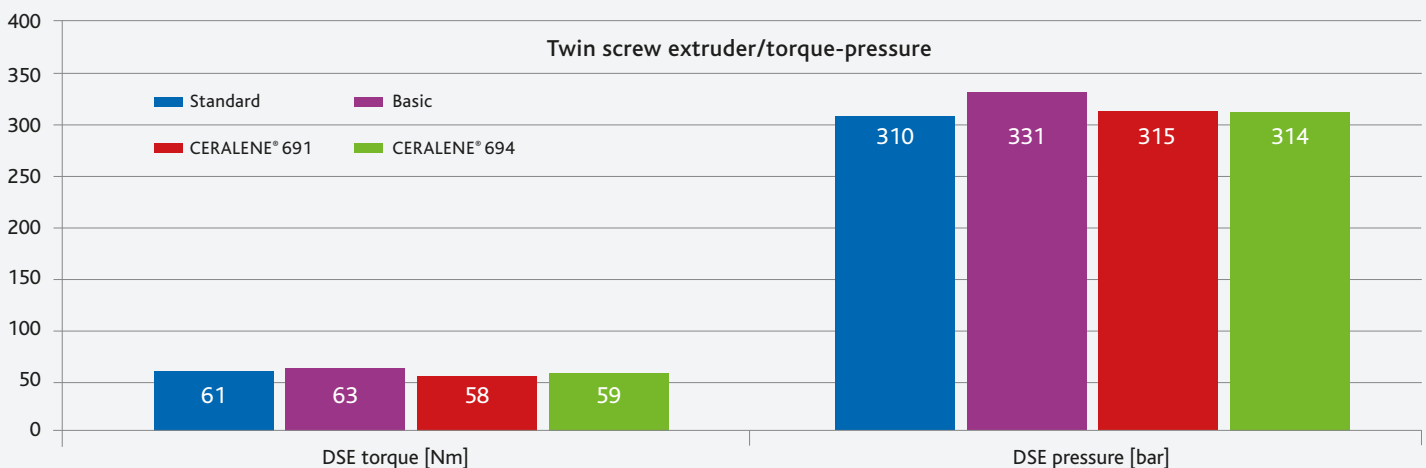
## CERALENE® polyester wax, rigid PVC – window profile – CaZn

| TR 203 U--        | 1    | 5     | 6    | 8    |
|-------------------|------|-------|------|------|
| formulation       | phr  | phr   | phr  | phr  |
| S-PVC KW 67       |      | 100   |      |      |
| Impact modifier   |      | 6     |      |      |
| TiO <sub>2</sub>  |      | 3     |      |      |
| Filler            |      | 10    |      |      |
| CaZn stabiliser   |      | 3.20  |      |      |
| Lubricant         |      | 0.075 |      |      |
| Neutral ester wax | 0.30 |       |      |      |
| CERALENE® 691     |      |       | 0.15 |      |
| CERALENE® 694     |      |       |      | 0.15 |

[Nm] CERALENE® 691 and 694 comparison with neutral ester wax



■ Standard - 0.30 phr neutral ester wax    
 ■ Basic - no neutral ester wax    
 ■ CERALENE® 691 - 0.15 phr    
 ■ CERALENE® 694 - 0.15 phr

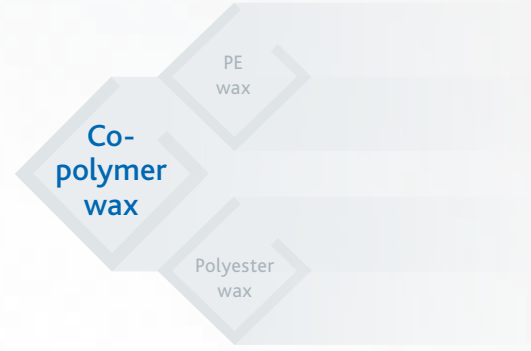


Comparison of CERALENE® polyester wax with a neutral esterwax with only half the dosage (0.30 phr/0.15 phr)

# CERALENE® polar copolymer-waxes

## Function:

- mainly internal
- nearly neutral regarding fusion
- low volatility and low plate out
- suitable as carrier for pigments

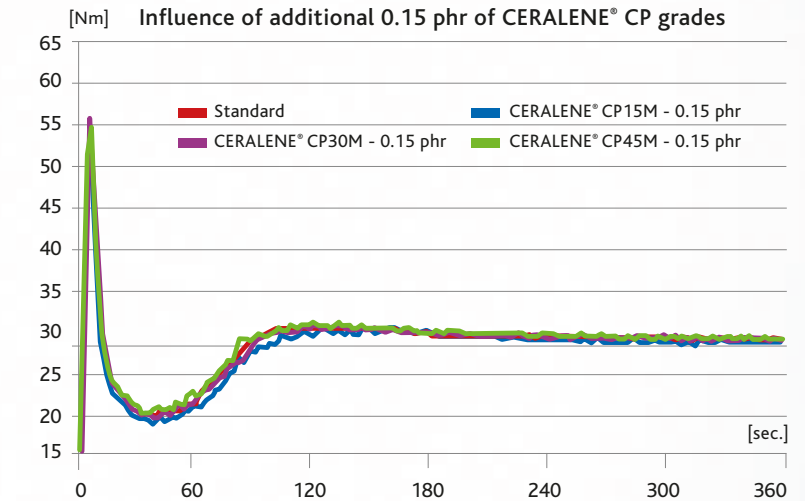


## CERALENE® CP15M / CERALENE® CP30M / CERALENE® CP45M

| CERALENE® grade | chem. description | acid value [mg KOH/g] | drop point [°C] | viscosity [mPa · s] at 120°C | density [g/cm³] at 23°C | penetration [mm · 10 <sup>-1</sup> ] at 25°C |
|-----------------|-------------------|-----------------------|-----------------|------------------------------|-------------------------|--|
| CERALENE® CP15M | copolymer wax     | 17                    | 103             | 500                          | 0.93                    | 4  |
| CERALENE® CP30M | copolymer wax     | 28                    | 98              | 500                          | 0.93                    | 5  |
| CERALENE® CP45M | copolymer wax     | 37                    | 98              | 600                          | 0.93                    | 7  |

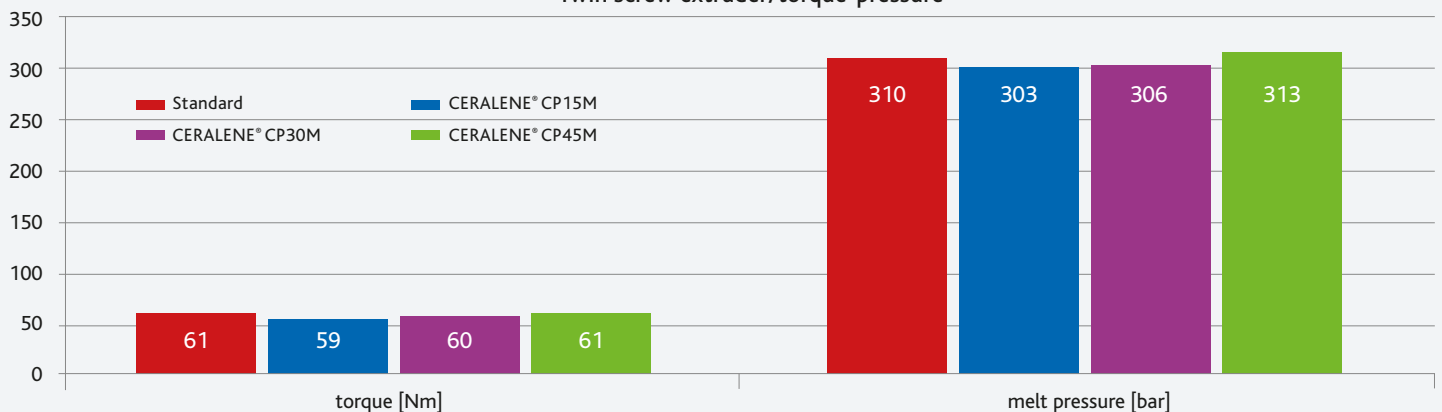
## CERALENE® copolymer wax – rigid PVC – window profile-CaZn

| TR 203 U--         | 1   | 9     | 10   | 11   |
|--------------------|-----|-------|------|------|
| formulation        | phr | phr   | phr  | phr  |
| S-PVC KW 67        |     | 100   |      |      |
| Impact modifier    |     | 6     |      |      |
| TiO <sub>2</sub>   |     | 3     |      |      |
| Filler             |     | 10    |      |      |
| CaZn stabiliser    |     | 3.20  |      |      |
| Lubricant          |     | 0.075 |      |      |
| Fatty acid diester |     | 0.30  |      |      |
| CERALENE® CP15M    |     | 0.15  |      |      |
| CERALENE® CP30M    |     |       | 0.15 |      |
| CERALENE® CP45M    |     |       |      | 0.15 |



|       |       | 1    | 9    | 10   | 11   |
|-------|-------|------|------|------|------|
| tpl   | [min] | 1.60 | 1.60 | 1.70 | 1.50 |
| Mdmax | [Nm]  | 28.9 | 27.7 | 29.5 | 28.3 |
| Mda   | [Nm]  | 28.2 | 28.3 | 28.1 | 28.5 |

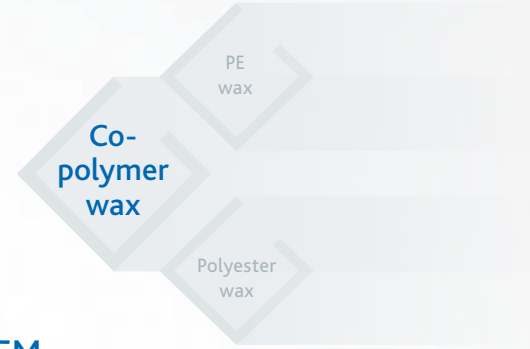
## Twin screw extruder/torque-pressure



# CERALENE® polar copolymer-waxes

## Function in PVC injection moulding:

- positive effect on vicat softening point in comparison to standard internal lubricants



## CERALENE® CP15M / CERALENE® CP30M / CERALENE® CP45M

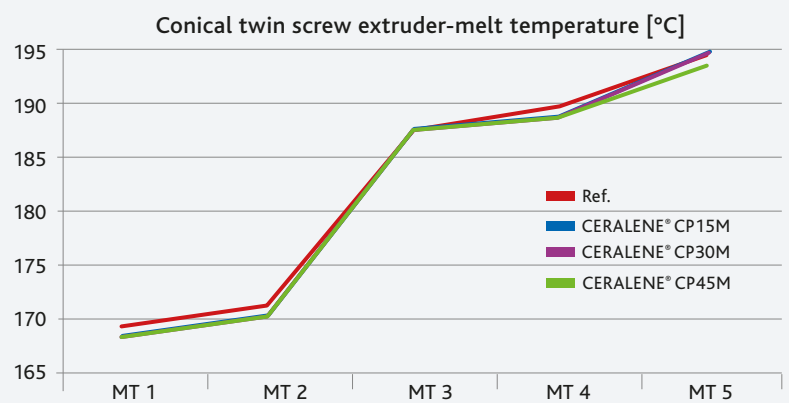
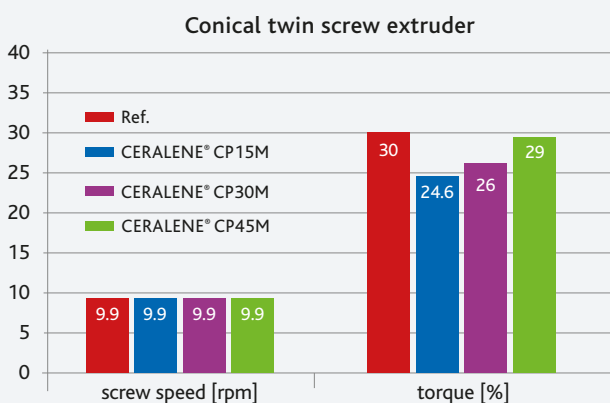
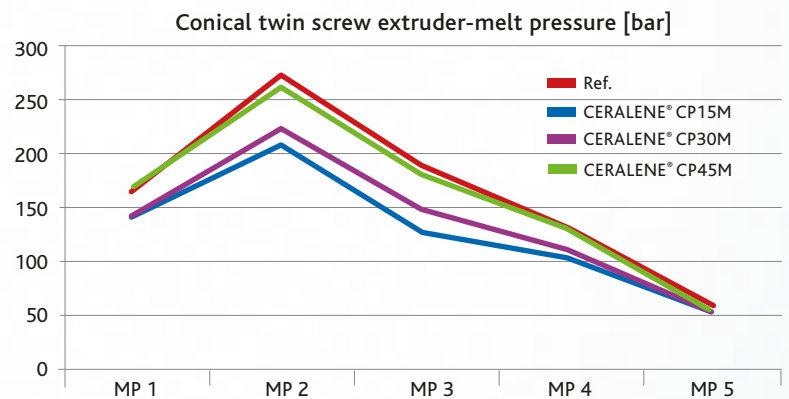
| CERALENE® grade | chem. description | acid value [mg KOH/g] | drop point [°C] | viscosity [mPa · s] at 120°C | density [g/cm <sup>3</sup> ] at 23°C | penetration [mm · 10 <sup>-1</sup> ] at 25°C |
|-----------------|-------------------|-----------------------|-----------------|------------------------------|--------------------------------------|--|
| CERALENE® CP15M | copolymer wax     | 17                    | 103             | 500                          | 0.93                                 | 4  |
| CERALENE® CP30M | copolymer wax     | 28                    | 98              | 500                          | 0.93                                 | 5  |
| CERALENE® CP45M | copolymer wax     | 37                    | 98              | 600                          | 0.93                                 | 7  |

## CERALENE® copolymer wax, rigid PVC – injection moulding-CaZn

| TR R-05/15              | A    | B    | C    | D    |
|-------------------------|------|------|------|------|
| formulation             | phr  | phr  | phr  | phr  |
| S-PVC KW 58             |      | 100  |      |      |
| Filler                  |      | 1    |      |      |
| CaZn stabiliser         |      | 4.00 |      |      |
| PE wax                  |      | 0.10 |      |      |
| Dicarboxylic acid ester | 0.25 |      |      |      |
| CERALENE® CP15M         |      | 0.25 |      |      |
| CERALENE® CP30M         |      |      | 0.25 |      |
| CERALENE® CP45M         |      |      |      | 0.25 |

|                   | A          | B    | C   | D   |     |
|-------------------|------------|------|-----|-----|-----|
| Screw speed [rpm] | 9.9        | 9.9  | 9.9 | 9.9 |     |
| Torque [Nm]       | 185        | 140  | 153 | 180 |     |
| Torque [%]        | 30         | 24.6 | 26  | 29  |     |
| Melt pressure     | MD 1 [bar] | 170  | 144 | 146 | 172 |
|                   | MD 2 [bar] | 272  | 209 | 226 | 261 |
|                   | MD 3 [bar] | 191  | 130 | 149 | 182 |
|                   | MD 4 [bar] | 134  | 104 | 115 | 132 |

|   | A    | B    | C     | D    |
|---|------|------|-------|------|
| Fusion time [min]                           | 7:18 | 9:14 | 7:56  | 6:20 |
| Torque – Max [Nm]                           | 56.8 | 54.9 | 55.85 | 57.4 |
| Torque 15 min after P-time [Nm]             | 41.3 | 47.7 | 46.7  | 43.0 |
| Melt temperature 15 min after P-time t [°C] | 172  | 169  | 170   | 172  |





## International distributors

### Europe

#### Belgium, France, Luxembourg, The Netherlands

Lapasse Additives Chemicals  
17, rue Salvador Allende, F-95210 Saint Gratien  
Phone: +33 (0) 1 39 89 58 40, Fax: +33 (0) 1 39 34 02 31  
E-mail: information@lapchem.fr

#### Bulgaria, Romania

Chemco Trade srl  
Blvd.Decebal no.1 Bl.H2,  
ap.86-90, sector 3,  
030961 Bucharest, Romania  
Phone: +4-021.320.44.70, Fax: +4-021-320.17.75  
E-mail: service@chemco.ro

#### Denmark, Finland, Norway, Sweden

SAN-Safic-Alcan Nordic AB  
Faktorvägen 9, SE-434 37 Kungälv  
Phone: +46 (0) 300 30240, Fax: +46 (0) 300 73251  
E-mail: info@safic-alcan.se

#### Germany

keim *additec* surface GmbH  
Hugo-Wagener-Str. 9, D-55481 Kirchberg/Hunsrück  
Phone: +49 67 63/93 33-0, Fax: +49 67 63/93 33-30  
E-mail: information@keim-additec.de

#### Italy

EICO NOVACHEM Srl  
Via Lusardi, 8, I-20122 Milano, Italy  
Phone: +39 02 58442902, Fax: +39 02 58442920  
Mobile: +39 348 1548402  
E-mail: vcarli@eiconovachem.it

#### Poland, Estonia, Latvia, Lithuania

PROCIMA Sp. z o.o.  
ul. Narbutta 39 m. 3, PL-02-536 Warszawa  
Phone: +48 22 646 70 22, Fax: +48 22 646 41 83  
E-mail: procima@procima.pl

#### Portugal, Spain

SINEX S.L.  
C/ Nervión, 4 (lonja), E-48001 Bilbao  
Phone: +34-94-4 23 26 93, Fax: +34-94-4 23 07 61  
E-mail: comercial@sinexsl.com

#### Russia

EUROCERAS RUS LLC  
Bogatyrskij pr., 12, office 9, Sankt-Petersburg, Russia  
Phone: +7 812 339 7742, Phone: +7 921 970 4847  
E-mail: eurocerasrus@euroceras.eu

#### Switzerland

Distona AG  
Hauptplatz 5, 8640 Rapperswil, Switzerland  
Phone: +41 55 533 00 50,  
E-mail: info@distona.ch

#### Turkey

Prosim Kimya San. ve Tic. Ltd. Sti.  
Kalegasi Sok. No. 5B, Rumelihisari  
Sariyer, 34470 Istanbul/Turkey  
Phone: +90-212-263 78 21, Fax: +90-212-263 78 25  
E-mail: semih.iscimenler@prosim.com.tr

#### Ukraine

PROCIMA 2 LTD  
Medova Str. 2, 46008 Ternopil, Ukraine  
Phone: +38 06 73 70 40 29, +38 06 75 06 41 45  
E-Mail: procima-ua@ukr.net

#### United Kingdom, Ireland

Manchester Chemicals Ltd  
67 London Road, Alderley Edge, Cheshire, SK9 7DT  
Phone: +44 (0) 1625585495  
E-mail: info@manchesterchemicals.com

### Middle East

#### Iran

Arya Chemie Poushesh Co.  
No. 2485 Vali-E-Asr Ave., Negar Tower, 10th Floor, Unit#4  
Tehran, Iran 1969833111  
Phone: +98 21 8864 1782-4, Fax: +98 21 8864 178-4  
E-mail: info@aryachemiepoushesh.com

#### UAE, KSA; Qatar, Kuwait, Bahrain, State of Oman

IMEA TECHNOLOGIES FZC  
P.O.BOX 120203, A03-096, SAIF ZONE,  
SHARJAH, United Arab Emirates  
Phone: +971 65574800, Mobil: +971 554942221,  
Attn. Mr. Azhar Kazmi  
E-mail: azhar@imeatech.com

### Africa

#### South-Africa

Ziva Chem (Pty) Ltd  
P.O. Box 73516, Fairland, 2030 South Africa  
Phone: +27 82 850 9483, E-mail: roelof@zivachem.com

### Asia

#### China (Masterbatches, inks)

H.J. UNKEL (Shanghai) International Trading Co. Ltd.  
Block 28, No. 1288 Zhong Chun Road,  
Minhang District, Shanghai 201109, P.R. China  
Phone: +86-21-5169-1088, Fax: +86-21-5282-9830  
E-mail: shchemical@hjunkel.net.cn

H.J. UNKEL (Foshan) Ltd., Room 2204, D Building  
Tongji Plaza, 66 Tongji Road Foshan, 528000 P.R. China  
Phone: +86-757-8333-1488, Fax: +86-757-8335-9715  
E-mail: foshan@hjunkel.com

H.J. UNKEL (Beijing) Office, Rm. 1004, No. 2 Building  
Hui Huang Guo Ji, No. 10 Shang Di Street  
HaiDian District, Beijing, 100000 P.R. China  
Phone: +86-10-59713081, Fax: +86-10-59713651  
E-mail: beijing@hjunkel.net.cn

H.J. UNKEL (Chongqing) Office  
20-8, Block 2, NO.6 Shanhu Road, Nanping Street  
Nanan District, Chongqing, P.R. China  
Phone: +86-23-86364773, 86364667, Fax: +86-23-86364746  
E-mail: chongqing@hjunkel.com

#### China (PVC)

CHNV NEW MATERIAL TECHNOLOGY CO., LTD.  
No. 5, Qiaotai Street, Qiao Xin Xi Yi Road,  
Qiaotou Town, Dongguan, Guangdong, China  
Phone: +86-769-81024888/83348666,  
Fax: +86-769-82363383, E-mail: info@gdchnv.cn,  
zhoushuhui@gdchnv.com

#### Hong Kong

H.J. UNKEL Ltd.,  
62 Hoi Yuen Road, 3/F., Phase 1  
Kwun Tong, Kowloon, Hong Kong  
Phone: +852-27630308, 27630310,  
Fax: +852-2341-7242, E-mail: hongkong@hjunkel.com

#### India / Sri Lanka

Krishna Enterprise  
27 Latif House, 250 Sant Tukaram Road  
Masjid Bunder E., Mumbai-400009, Maharashtra  
Mobile: +91 9819036601  
E-mail: gaurang@krishnaenterprise.org

#### Indonesia

PT Agape Theresindo  
Jl. Boulevard Raya Blok WE2 No.2K  
Kelapa Gading, Jakarta 14240, Indonesia  
Phone: +62-21-45874744, 45866436  
Fax: +62-21-45844961  
E-mail: meryganda@agape-theresindo.com

#### Japan

Estchem Co., Ltd., Tokyo  
3F, Sakura Horidome Bldg., 1-8-12  
Nihombashi-Horidomecho  
Chuo-ku, Tokyo, 103-0012, Japan  
Phone: +813-5614-4610, Fax: +813-5614-4631  
E-mail: n-komatsu@estchem.co.jp

#### Korea

Magtec Co., Ltd.  
4th Floor, Woojeong BD, Dogok-ro 7gil 28,  
Gangnam-Gu, Seoul, Korea 06255  
Phone: +82-2-553-2721, Fax: +82-2-553-6017  
E-mail: magtec@magtec.kr

#### Malaysia, Singapore

H.J. UNKEL Chemicals Sdn. Bhd.  
28 Jalan Biola 33/1, Section 33,  
40400 Shah Alam, Selangor, Malaysia  
Phone: +603 5525 9333, Fax: +603 5525 9338  
E-mail: yeowheng.tan@hjunkel.com.my  
bobby@hjunkel.com.my

#### Pakistan

D.S ENTERPRISES  
Hajvery Arcade, 2nd Floor, Office # 1  
Near Bank Road, Main Bund Road, Lahore, Pakistan  
Phone: +92-42-37146688, +36110089  
Mobile: +92-333-4394551  
E-mail: ds.chemicals@gmail.com, imran.ds11@gmail.com

#### Thailand

H.J. UNKEL Chemical (Thailand) Ltd.  
22 Soi Ekachai 53, Ekachai Road, Kwaeng Bangbon,  
Khet Bangbon, Bangkok 10150  
Phone: +66 2 898-0411-14, Fax: +66 2 898-0415  
E-mail: hjunkelchemicalthai@gmail.com

#### Vietnam

Edstachem Group  
Vietnam Representative Office  
2nd Floor, Thien Son Building  
No 5 Nguyen Gia Thieu Street,  
District 3, HCMC, Vietnam.  
Phone: (84-8) 39 30 73 48 Fax : (84-8) 39 30 73 49  
E-mail: heng\_weichaur@edstachem.com

### North-/South America

#### Argentina, Chile, Uruguay

PRIMASET SRL  
Bermudez 3321, CP 1636 Olivos,  
Buenos Aires, Argentina  
Phone: +54 11 4799 5071  
E-mail: info@primaset.com.ar

#### Brasil

LAL Consultant  
Rua Nebraska 246, A 12, Brooklin  
CEP 04560-010, São Paulo, SP  
Phone: +55 11 99979-4605,  
E-mail: luizleal@terra.com.br

#### Canada

Arya Chem Inc.  
4789 Yonge Street, Suite 1203  
Toronto, Ontario M2N 0G3, Canada  
Phone: +1 416 217-0666, Fax: +1 416 217-0676  
E-mail: info@aryachem.com

#### Colombia

RECIEND S.A.S.  
Calle 24A # 25 -73  
Bogotá - Colombia  
Phone: +57 1 518 8900  
E-mail: reciend@reciend.com

#### Mexico

SPECIALPY CHEMICALS S.A. DE C.V.  
Valle de Solis # 73, Fracc. El Mirador, C.P. 53050  
Naucalpan, Estado de México  
Phone: +52 55 53 73 76 25, Mobile: +52-55 5109 2132  
E-mail: ernesto\_garciarm@specialpychemicals.com.mx

#### Peru

Laurus S.A.C.  
Jr. Monsefú 903, Urb. Zona Industrial Lima  
Lima 01, Lima, Perú  
Phone: +51 01 336-5412  
E-Mail: info@laurusperu.com

#### U.S.A.

keim *additec* surface USA LLC  
P.O. Box 10, LaGrange, IL 60525  
Phone: +1 708 269-1304 (Mobile)  
E-mail: dave.grabacki@keim-additec.com



Download  
digital brochure

All information given here are based on our own research or the research of others and believed to be accurate and shall give the user guidance for the application. Nevertheless these data are no specification and due to the versatile possible formulations, applications, processings and further parameters at the formulator/user the usage of these products has to be tested carefully in the particular system/application by the formulator/user. All information mentioned here are not warranted properties. There is no responsibility of the seller if the materials are used outside the recommended field of use; any liability, also for any patent infringement, cannot be derived from this.



## Function:

- strong acceleration of fusion
- excellent non sticking behaviour



## Polar polyolefins – oxidised HDPE waxes

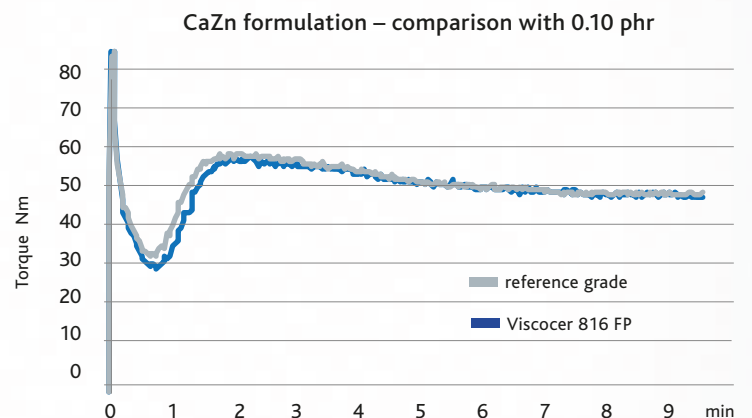
| VISCOCER® grade           | chem. description/ type | acid value [mg KOH/g] | drop point [°C] (DSC) | viscosity [mPa · s] at 160°C | density [g/cm³] at 23 °C | penetration [mm · 10 <sup>-1</sup> ] at 25°C |
|---------------------------|-------------------------|-----------------------|-----------------------|------------------------------|--------------------------|--|
| VISCOCER® 816 fine powder | HDPE wax                | 16                    | 135                   | 8000                         | 0.98                     | <1   |

## Viscocer® rigid PVC – window profile – CaZn

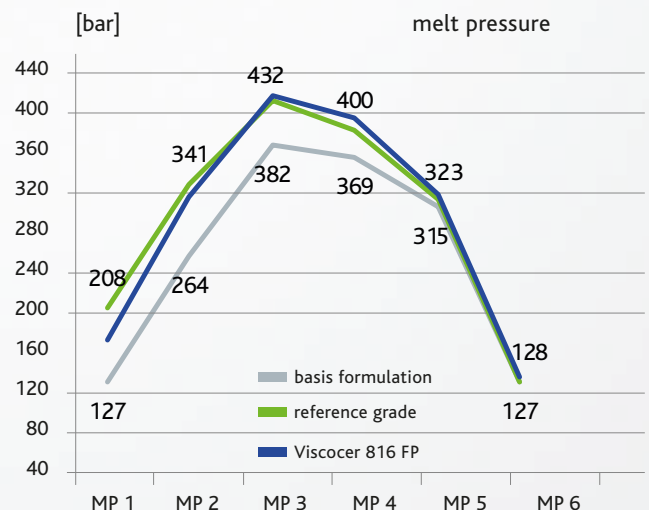
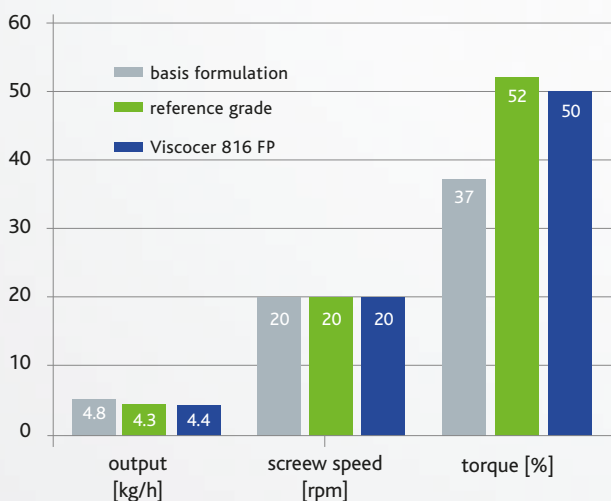
| formulation               | phr |     |     |
|---------------------------|-----|-----|-----|
| S-PVC KW 66               | 100 |     |     |
| Filler                    | 10  |     |     |
| Impact modifier           | 6   |     |     |
| Stabiliser CaZn           | 3   |     |     |
| Lubricant                 | 0.4 |     |     |
| TiO <sub>2</sub>          | 3.4 |     |     |
| reference grade           | –   | 0.1 |     |
| VISCOCER® 816 fine powder | –   |     | 0.1 |

12 GNa

## Brabender



## Collin – single screw extruder [30 mm / 25 D]



# VISCOCER® oxidised LDPE waxes

## Function oxidised LDPE waxes:

- acceleration of fusion



## Polar polyolefin wax – oxidised LDPE wax

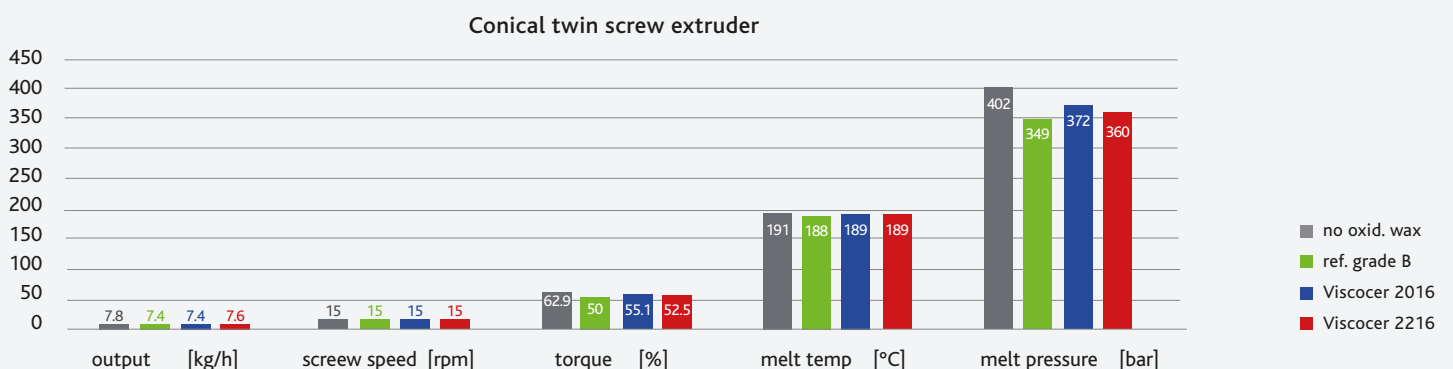
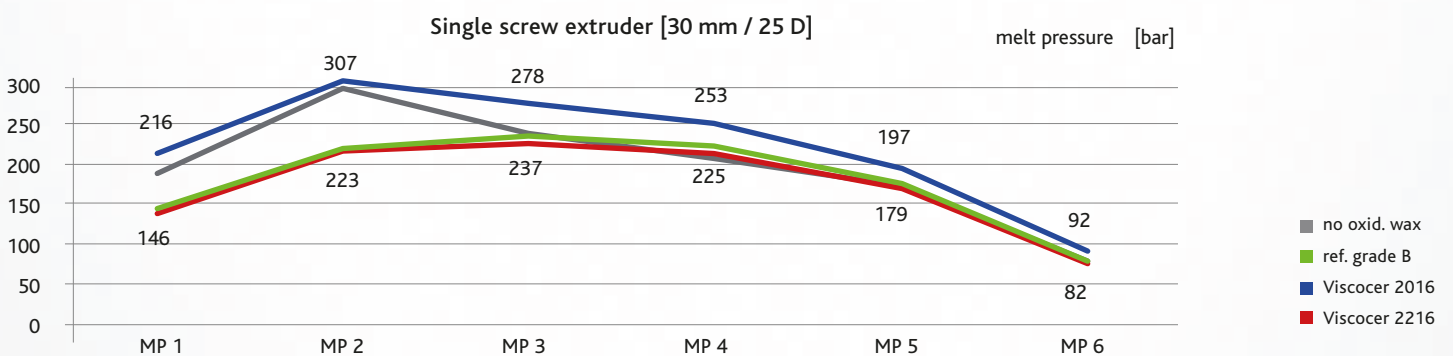
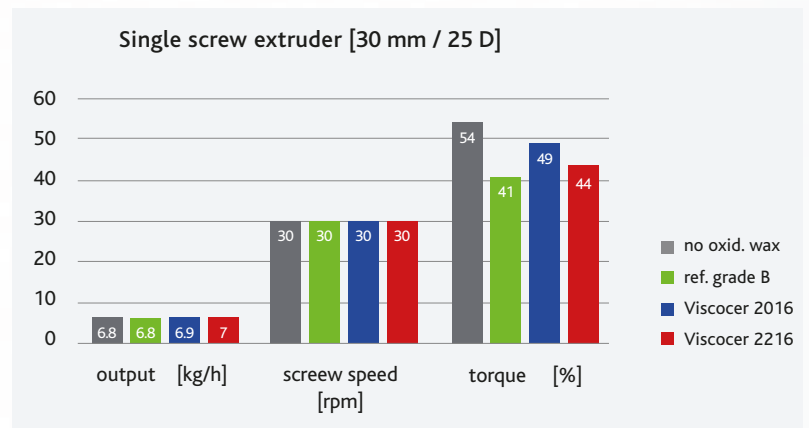
| VISCOCER® grade       | chemical description | acid value [mg KOH/g] | drop point [°C] | viscosity [mPa · s] at 140°C | density [g/cm³] at 23°C | penetration [mm · 10 <sup>-1</sup> ] at 25°C |
|-----------------------|----------------------|-----------------------|-----------------|------------------------------|-------------------------|--|
| VISCOCER® 2016 powder | LDPE wax             | 16                    | 102             | 800                          | 0.94                    | 4  |
| VISCOCER® 2216 powder | LDPE wax             | 16                    | 100             | 230                          | 0.94                    | 6  |

\*these grades are also available als flakes beside the powder form

## Viscocer® rigid PVC – pipe – CaZn

| formulation       | phr  |
|-------------------|------|
| S-PVC KW 68       | 100  |
| Filler            | 15   |
| Stabiliser CaZn   | 2.1  |
| no oxid. wax      | –    |
| reference grade B | 0.18 |
| VISCOCER® 2016    | 0.18 |
| VISCOCER® 2216    | 0.18 |

17 CDI



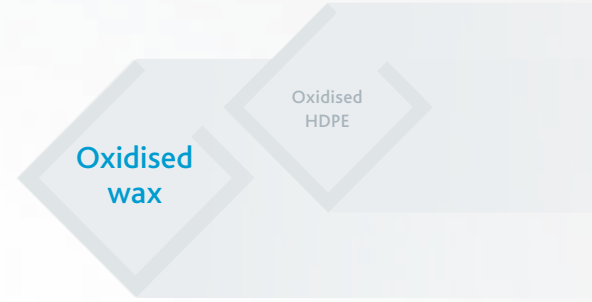
# VISCOCER® oxidised LDPE waxes



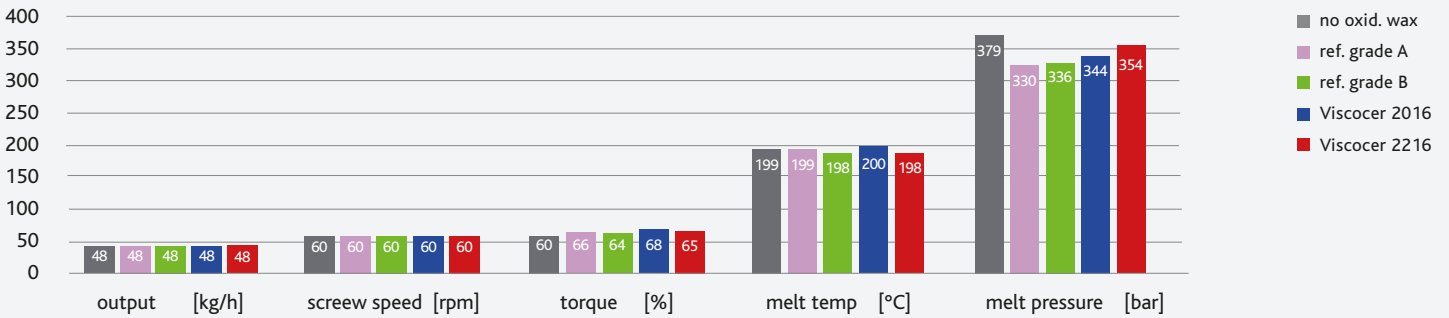
## Viscocer® rigid PVC – window profile – CaZn

| formulation       | phr  |      |      |
|-------------------|------|------|------|
| S-PVC KW 68       | 100  |      |      |
| Filler            | 8    |      |      |
| Impact modifier   | 5    |      |      |
| TiO2              | 4    |      |      |
| Stabiliser CaZn   | 3.3  |      |      |
| no oxid. wax      | –    |      |      |
| reference grade A | 0.35 |      |      |
| reference grade B |      | 0.35 |      |
| VISCOCER® 2016    |      |      | 0.35 |
| VISCOCER® 2216    |      |      | 0.35 |

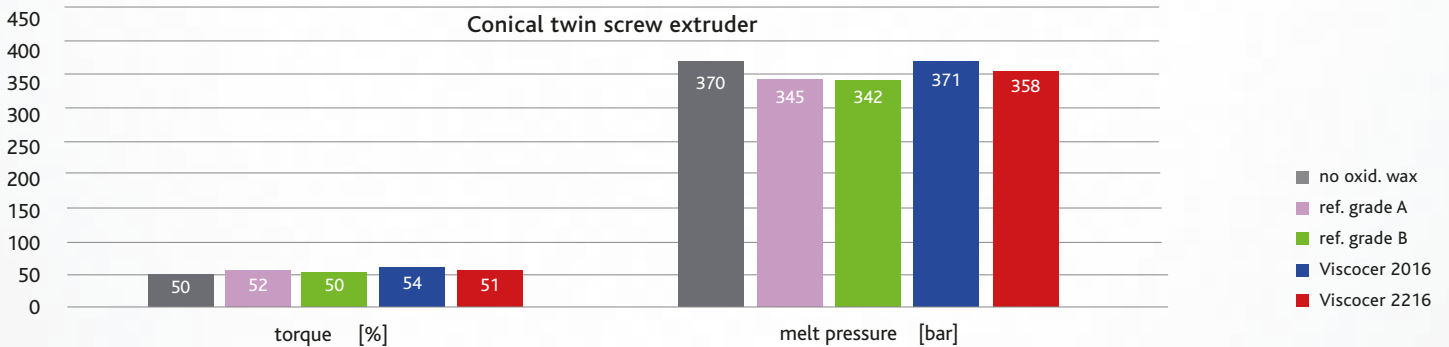
\*17 CDI



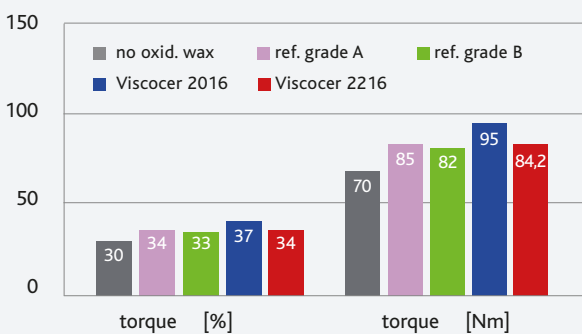
Twin screw extruder – KM 35-28



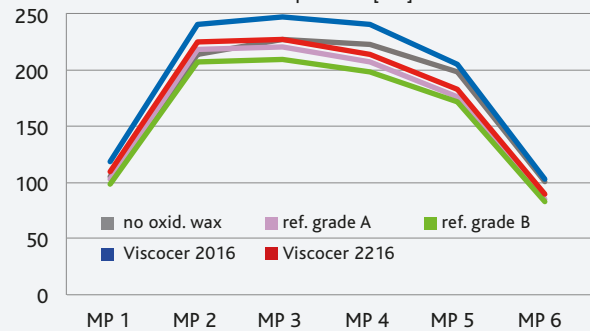
Conical twin screw extruder



Collin – single screw extruder [30 mm / 25 D]



Collin – single screw extruder [30 mm / 25 D]  
melt pressure [bar]



# International distributors

## Europe

### Germany/Austria

ceronas GmbH & Co. KG  
Hugo-Wagener-Str. 3, 55481 Kirchberg, Germany  
Phone: +49 (0) 67 63/6 33 50-0, Fax: +49 (0) 67 63/6 33 50 99  
E-mail: info@ceronas.de

### Belgium (Coatings)

Grolman Benelux BV  
Nieuwenkampsmaten 6-10, NL-7472 DE GOOR  
Phone: +31 547 357 050, Fax: +31 547 357 054  
E-mail: info.nl@grolman-group.com

### Belgium (Plastics)

Lapasse Additives Chemicals  
17, rue Salvador Allende, F-95210 Saint-Gratien  
Phone: +33 1 39 89 58 40, Fax: +33 1 39 34 02 31  
E-mail: information@lapchem.fr

### Denmark, Finland, Norway, Sweden

Grolman Nordic Specialty Chemicals Aps,  
Skæringvej 88, DK 8520 Lystrup  
Phone: +45 86 72 62 00  
E-mail: salesupport@grolman-group.com

### France

Lapasse Additives Chemicals  
17, rue Salvador Allende, F-95210 Saint-Gratien  
Phone: +33 1 39 89 58 40, Fax: +33 1 39 34 02 31  
E-mail: information@lapchem.fr

### Italy

EICO NOVACHEM Srl  
Via Lusardi, 8, I-20122 Milano  
Phone: +39 02 58442902, Fax: +39 02 58442920  
Mobile: +39 348 1548402  
E-mail: vcarli@eiconovachem.it

### Poland, Estonia, Latvia, Lithuania

PROCIMA Sp. z o.o.  
ul. Narbutta 39 m. 3, PL-02-536 Warszawa  
Phone: +48 22 646 70 22, Fax: +48 22 646 41 83  
E-mail: procima@procima.pl

### Romania

Chemco Trade srl  
Blvd. Decebal no.1 Bl.H2,  
ap. 86-90, sector 3,  
030961 Bucharest, Romania  
Phone: +4-021.320.44.70, Fax: +4-021-320.17.75  
E-mail: service@chemco.ro

### Russia

EUROCERAS RUS LLC  
Bogatyrskij pr., 12, office 9, Sankt-Petersburg, Russia  
Phone: +7 812 339 7742, Phone: +7 921 970 4847  
E-mail: eurocerasrus@euroceras.eu

### Spain, Portugal

SINEX S.L., C/Nervi6n, 4 (Ionja), E-48001 Bilbao  
Phone: +34 94 4 23 26 93, Fax: +34 94 4 23 07 61  
E-mail: comercial@sinexsl.com

### Switzerland

Distona AG  
Hauptplatz 5, 8640 Rapperswil, Switzerland  
Phone: +41 55 533 00 50,  
E-mail: info@distona.ch

### The Netherlands

Grolman Benelux BV  
Nieuwenkampsmaten 6-10, NL-7472 DE GOOR  
Phone: +31 547 357 050, Fax: +31 547 357 054  
E-mail: info.nl@grolman-group.com

### Turkey

Prosim Kimya San. ve Tic. Ltd. Sti.  
Kalegasi Sok. No. 5B, Rumelihisari  
Sariyer, 34470 Istanbul/Turkey  
Phone: +90-212-263 78 21, Fax: +90-212-263 78 25  
E-mail: semih.iscimenler@prosim.com.tr

### Ukraine

PROCIMA 2 LTD  
Medova Str. 2, 46008 Ternopil, Ukraine  
Phone: +380 6737 04029, +380 6750 64145  
E-mail: procima-ua@ukr.net

### United Kingdom, Ireland (Micronised waxes)

Crestchem Ltd.  
10 Hill Avenue, Amersham, Bucks HP6 5BW, UK  
Phone: +44 1494 434 660, Fax: +44 1494 434 990  
Mobile: +44 7765 232 731  
E-Mail: james@crestchem.co.uk

### United Kingdom (Plastics)

Manchester Chemicals Ltd  
67 London Road, Alderley Edge, Cheshire, SK9 7DT  
Phone: +44 (0) 162585495,  
E-Mail: info@manchesterchemicals.com

## Middle East Region

### Iran

Arya Chemie Poushesh Co.  
No. 2485 Vali-E-Asr Ave., Negar Tower, 10th Floor, Unit#4  
Tehran, Iran 1969833111  
Phone: +98 21 8864 1782-4, Fax: +98 21 8864 178-4  
E-mail: info@aryachemiepoushesh.com

### UAE, KSA; Qatar, Kuwait, Bahrain, State of Oman

IMEA TECHNOLOGIES FZC  
P.O.BOX 120203, A03-096, SAIF ZONE,  
SHARJAH, United Arab Emirates  
Phone: +971 65574800, Mobil: +971 554942221,  
Attn. Mr. Azhar Kazmi  
E-mail: azhar@imeatech.com

## Africa

### South-Africa (Micronised waxes)

CJP chemicals (Pty) Ltd.  
60 Electron Avenue, Isando 1600  
Johannesburg, South Africa  
Phone: +27 11 494-6700, Fax: +27 11 494-6701  
E-mail: dereneeh@cjpchemicals.co.za

### South-Africa (Plastics)

Ziva Chem (Pty) Ltd  
P.O. Box 73516, Fairland, 2030 South Africa  
Phone: +27 82 850 9483, E-mail: roelof@zivachem.com

## North-/South America

### Argentina, Chile, Uruguay

PRIMASET SRL  
Bermudez 3321, CP 1636 Olivos,  
Buenos Aires, Argentina  
Phone: +54 11 4799 5071  
E-mail: info@primaset.com.ar

### Brazil

LAL Consultant  
Rua Nebraska 246, A 12, Brooklin  
CEP 04560-010, São Paulo, SP  
Phone: +55 11 99979-4605,  
E-mail: luizleal@terra.com.br

### Canada

Arya Chem Inc.  
4789 Yonge Street, Suite 1203  
Toronto, Ontario M2N 0G3, Canada  
Phone: +1 416 217-0666, Fax: +1 416 217-0676  
E-mail: info@aryachem.com

### Colombia

RECIEND S.A.S.  
Calle 24A # 25 -73, Apartado Aéreo (P.O.B.) 3717  
Bogotá - Colombia  
Phone: +57 (1) 518-8900, +57 316 320 5293  
E-mail: desarrollo.proyectos02@reciend.com

### Mexico

SPECIALPY CHEMICALS S.A. DE C.V.  
Valle de Solis # 73, Fracc. El Mirador, C.P. 53050  
Naucalpan, Estado de México  
Phone: +52 55 53 73 76 25, Mobile: +52-55 5109 2132  
E-mail: ernesto\_garciarm@specialpychemicals.com.mx

### Peru

Laurus S.A.C.  
Jr. Monsefú 903, Urb. Zona Industrial Lima  
Lima 01, Lima, Perú  
Phone: +51 01 336-5412  
E-Mail: info@laurusperu.com

### U.S.A.

keim *additec* surface USA LLC  
P.O. Box 10, LaGrange, IL 60525  
Phone: +1 708 269-1304 (Mobile)  
E-mail: dave.grabacki@keim-additec.com

## Asia

### China (All applications besides PVC and Wood coatings)

H.J. UNKEL (Shanghai) International Trading Co. Ltd.  
Block 28, No. 1288 Zhong Chun Road,  
Minhang district, Shanghai 201109, P.R. China  
Phone: +86-21-5169-1088, Fax: +86-21-5282-9830  
E-mail: shchemical@hjunkel.net.cn

H.J. UNKEL (Foshan) Ltd., Room 2204, D Building  
Tongji Plaza, 66 Tongji Road Foshan, 528000 P.R. China  
Phone: +86-757-8333-1488, Fax: +86-757-8335-9715  
E-mail: fschemical@hjunkel.com

H.J. UNKEL (Beijing) Office, Rm. 1004, No. 2 Building  
Hui Huang Guo Ji, No. 10 Shang Di Street  
HaiDian District, Beijing, 100000 P.R. China  
Phone: +86-10-59713081, Fax: +86-10-59713651  
E-mail: beijing@hjunkel.net.cn

H.J. UNKEL (Chongqing) Office  
20-8, Block 2, NO.6 Shanhu Road, Nanping Street  
Nanan District, Chongqing, P.R. China  
Phone: +86-23-86364773, 86364667,  
Fax: +86-23-86364746  
E-mail: donald@hjunkel.com

### China (PVC, Wood coatings)

CHNV NEW MATERIAL TECHNOLOGY CO., LTD.  
No. 5, Qiaotai Street, Qiao Xin Xi Yi Road,  
Qiaotou Town, Dongguan, Guangdong, China  
Phone: +86-769-81024888/83348666,  
Fax: +86-769-82363383, E-mail: info@gdchnv.cn,  
zhousuhui@gdchnv.com

### Hong Kong

H.J. UNKEL Ltd.,  
62 Hoi Yuen Road, 3/F., Phase 1  
Kwun Tong, Kowloon, Hong Kong  
Phone: +852-27630308, 27630310,  
Fax: +852-2341-7242, E-mail: hongkong@hjunkel.com

### India / Sri Lanka

Krishna Enterprise  
408, Aravalli Business Centre, R.C. Patel Road  
Opp Mayfair Complex, Borivali West, Mumbai 400092  
Maharashtra, India  
Phone: +91-22-2892 4776, +91-22-2892 4777  
Fax: +91-22-2892 4666, Mobile: +91 9819036601  
E-mail: gaurang@krishnaenterprise.org

### Indonesia

PT Agape Theresindo  
JL. Boulevard Raya Blok WE2 No.2K  
Kelapa Gading, Jakarta 14240, Indonesia  
Phone: +62-21-45874744, 45866436  
Fax: +62-21-45844961  
E-mail: meryganda@agape-theresindo.com

### Japan

Estchem Co., Ltd., Tokyo  
Sakura Horidome Bldg. 3F, 1-8-12,  
Nihombashi-Horidomecho, Chuo-ku, Tokyo, 103-0012, Japan  
Phone: +813-5614-4610, Fax: +813-5614-4631  
E-mail: n-komatsu@estchem.co.jp

### Korea

Magtec Co., Ltd.  
4th Floor, Woojeong BD, Dogok-ro 7gil 28,  
Gangnam-Gu, Seoul, Korea 06255  
Phone: +82-2-553-2721, Fax: +82-2-553-6017  
E-mail: magtec@magtec.kr

### Malaysia, Singapore

H.J. UNKEL Chemicals Sdn. Bhd.  
28 Jalan Biola 33/1, Section 33,  
40400 Shah Alam, Selangor, Malaysia  
Phone: +603 5525 9333, Fax: +603 5525 9338  
E-mail: YeowHeng.Tan@hjunkel.com.my  
bobby@hjunkel.com.my

### Pakistan

D.S ENTERPRISES  
Hajvery Arcade, 2nd Floor, Office # 1  
Near Bank Road, Main Bund Road, Lahore, Pakistan  
Phone: +92-42-37146688, +92-42-37146687  
Mobile: +92-333-4394551  
E-mail: ds.chemicals@gmail.com, imran.ds11@gmail.com

### Taiwan

Ever Finde Products Corporation  
4F, No. 238, Min-An West Rd.  
Xinzhuang District, New Taipei City, Taiwan, ROC  
Phone: +886-2-2203-8889 ext. 57, Fax: +886-2-2204 2477  
E-mail: info@everfinde.com.tw

### Thailand

H.J. UNKEL Chemical (Thailand) Ltd.  
22 Soi Ekachai 53, Ekachai Road, Kwaeng Bangbon,  
Khet Bangbon, Bangkok 10150  
Phone: +66 2 898-0411-14, Fax: +66 2 898-0415  
E-mail: hjunkelchemicalthai@gmail.com

### Vietnam

Edstachem Group  
Vietnam Representative Office, 2nd Floor, Thien Son Building  
No 5 Nguyen Gia Thieu Street,  
District 3, HCMC, Vietnam.  
Phone: (84-8) 39 30 73 48 Fax: (84-8) 39 30 73 49  
E-mail: heng.weichaur@edstachem.com



Download  
digital brochure

All information given here are based on our own research or the research of others and believed to be accurate and shall give the user guidance for the application. Nevertheless these data are no specification and due to the versatile possible formulations, applications, processings and further parameters at the formulator/user the usage of these products has to be tested carefully in the particular system/application by the formulator/user. All information mentioned here are not warranted properties. There is no responsibility of the seller if the materials are used outside the recommended field of use; any liability, also for any patent infringement, cannot be derived from this.