DEGAROUTE® 465

Methacrylate resin for durable cold plastic road markings

Description

- low viscosity methacrylate resin used as a binder for permanent markings based on cold plastic
- permanently elastic and is processed without plasticizers
- viscosity of ready formulated material is stable over a long period
- versatile use as: flat line, profiled and structure markings
- recommended surface temperature for application is between 5 °C and 60 °C
- tested by BaSt (Federal Road Research Institute of Germany)
- good wetting properties for fillers and pigments, outstandingly fluid cold plastics can be produced
- for use in cold and warm climates

- applications at temperatures below 5 °C are possible by addition of Accelerator 50 (see data sheet "Application of Cold Plastic and Cold Spray Plastic below 5 °C (+41°F)")

Applications

- markings at junctions and crossings, stop lines and direction arrows
- centre markings on freeways and highways
- manual application by trowel and draw box

Equipment

- manual application by trowel and draw box
- application by hand guided machines
- application by 2-component extrusion machines with 100:2 dosing
- application by draw box (100:2 system), even for profiled and structure markings
- application by 2-component machines with 1:1 dosing (see DEGAROUTE® 469)

Properties

- suitable for high temperatures
- permanently elastic
- resistant to ageing and weathering
- colorfast
- abrasion-proof
- resistant to de-icing salt and fuels
- low tendency to graying

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Product properties

Property	Value	Unit	Method
Form supplied	liquid		
Flow time at 23 °C	75 - 95	s	ISO 2431, 4 mm cup
Viscosity at 23 °C	approx. 170	mPas	Brookfield DV2, sp. 2/12 rpm
Density at 20 °C	0.97	g/cm^3	DIN 51757
Refractive index n_D^{20}	1.44		DIN 51423
Color value	< 50		APHA
Flash point	11	°C	DIN 51755

General remarks

Shelf life	at ≤ 25 °C minimum 12 months in original containers / from date of delivery
	at ≤ 30 °C minimum 6 months in original containers / from date of delivery
	This product contains max. 10 g/l residual volatiles (ASTM 2369 Method E).

Typical formulations:
465 - 1 / 1 - 3 mm / 100:2 system / flat: for hand, draw box or machine application

		pbw
Binder / resin	DEGAROUTE® 465	20.00
Dispersing additive	Disperbyk 167	0.10
Rheology additive	Byk D 410	0.10
Rheology additive	Bentone 27	0.10
Pigment (TiO_2)	Tioxide TR 92	10.00
Fine filler (15 µm)	Omyacarb 15GU	20.00
Coarse filler (0.1 - 0.4 mm)	Cristobalite M72	25.00
Premix beads	50 - 250 µm	25.00

Properties

Viscosity at 23 °C:	between 8 - 9 cm	blot test for CP
Viscosity at 23 °C:	between 13 - 14	Daniel flow gauge
Shore D hardness:	50 - 60	DIN 53505
Density:	1.85 g/cm^3	DIN 51757
Consumption:	approx 3.7 kg/m^2	for 2 mm thickness

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Typical formulations:
465 - 2 / up to 7 mm / 100:2 system / profile: application with suitable machines with profile function

		pbw
Binder / resin	DEGAROUTE® 465	20.00
Dispersing additive	Disperbyk 167	0.10
Rheology additive	Byk D 410	0.15
Rheology additive	Bentone 27	0.15
Pigment (TiO_2)	Tioxide TR 92	10.00
Fine filler (15 µm)	Omyacarb 15GU	20.00
Coarse filler (0.1 - 0.4 mm)	Cristobalite M72	25.00
Premix beads	50 - 250 µm	25.00

Properties

Viscosity at 23 °C:	approx. 6 cm	blot test for CP
Viscosity at 23 °C:	between 10 - 12	Daniel flow gauge
Shore D hardness:	50 - 60	DIN 53505
Density:	1.85 g/cm^3	DIN 51757
Consumption:	4 - 6 kg/m^2	depending on used profile

Typical formulations:
465 - 3 / up to 7 mm / 100:2 structure: application with suitable structure machines

		pbw
Binder / resin	DEGAROUTE® 465	20.00
Dispersing additive	Disperbyk 167	0.10
Rheology additive	Byk D 410	0.20
Rheology additive	Bentone 27	0.20
Pigment (TiO_2)	Tioxide TR 92	10.00
Fine filler (15 µm)	Omyacarb 15GU	25.00
Coarse filler (0.1 - 0.4 mm)	Cristobalite M72	20.00
Premix beads	100 - 600 µm	25.00

Properties

Viscosity at 23 °C:	approx. 6 cm	blot test for CP
Viscosity at 23 °C:	between 10 - 12	Daniel flow gauge
Shore D hardness:	42 - 52	DIN 53505
Density:	1.85 g/cm^3	DIN 51757
Consumption:	approx 1.5 - 3 kg/m^2	depending on used structure

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Typical formulations:
465 - 4 / up to 7 mm / 100:2 structure: application with suitable structure machines

		pbw
Binder / resin	DEGAROUTE® 465	20.00
Dispersing additive	Disperbyk 167	0.15
Rheology additive	Byk D 410	0.10
Rheology additive	Bentone 27	0.20
Pigment (TiO_2)	Tioxide TR 92	10.00
Fine filler (5 µm)	Omyacarb 5GU	15.00
Coarse filler (0.5 - 1.0 mm)	Minigrain 1	30.00
Premix beads	100 - 600 µm	25.00

Properties

Viscosity at 23 °C:	6 - 7 cm	blot test for CP
Viscosity at 23 °C:	between 10 - 12	Daniel flow gauge
Shore D hardness:	not determined	DIN 53505
Density:	1,92 g/cm^3	DIN 51757
Consumption:	1.5 - 3 kg/m^2	depending on used structure

Pot life and setting time

Typical formulations 465 - 1, 465 - 2, 465 - 3 and 465 - 4
Approved hardener: hardener powder, as a proportion of total formulation

Temperature (°C) (surface)	Hardener (50 % DBPO) (% by weight)	Pot life (min)	Setting time (min)
10	3.0	14	45
10	2.0	18	50
20	2.0	10	30
20	1.0	15	35
30	1.0	8	20
30	0.5	12	30
40	0.5	6	18

Note: All values are derived from laboratory test. Deviations caused by environmental factors might occur.

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Note

Manual dosage of hardener powder can use mixing ratios from the table.
Automatic dosage of hardener usually uses a mixing ratio between 1.5 - 2 %.

Performance test

Flat marking: BaSt certificate 20011DK0407
Structure marking: BaSt certificate 20011DK0314

Typical properties are approximate reference values. If you need product specifications please contact us.

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