Formulation 1: Industrial Coating

Catalyst	None	Reaxis C 218 (DBTL)	Reaxis C 716 (Bismuth Neodecanoate)
Part A			
Desmophen A365 65% [1] [2]	18.8	18.8	18.8
TiO2 rutil	29.8	29.8	29.8
Bentone 38 - 10% [3]	2.0	2.0	2.0
Baysilone OL 31 10% X [4]	0.2	0.2	0.2
MPA / BuAc 1:1	7.0	7.0	7.0
Desmophen A 365 65% [2]	19.3	19.3	19.3
Part B			
Reaxis C 218 10% in BuAc		0.4	
Reaxis C 716 10% in BuAc			0.8
Desmodur N3390 90% [5]	13.6	13.6	13.6
MPA / BuAc 1:1	3.1	3.1	3.1
Solids [% by weight]	67.0	67.0	67.0
Potlife [mins]	> 8h	39.0	23.0
Viscosity [sec] (DIN-cup 4. 23°C) appr.	20.0	20.0	20.0

Notes:

(1) All raw materials in units, grams

(2) acrylic resin; Bayer: OH#=92

(3) Elementis GmbH

(4) Borchers GmbH

(5) aliphatic polyisocyanate; Bayer; NCO content=19.6%

Curing and Film properties

Catalyst	None	Reaxis C 218	Reaxis C 716
Drying at 23 C in minutes per DIN 53150			
S1	36.0	18.0	17.0
S2	187.0	34.0	31.0
S3	195.0	38.0	34.0
S4	261.0	45.0	41.0
S5	>6 h	59.0	53.0
Pendulum Hardness after 1 day [sec]	74.0	106.0	100.0
Pendulum Hardness after 7 day [sec]	175.0	158.0	156.0

Formulation 2: Industrial Coating

Catalyst	None	Reaxis C 218	Reaxis C 716
Part A			
Desmophen A160 Solventnaphtha 100 (1)	43.2	43.2	43.2
Bentone 38 - 10% (2)	7.2	7.2	7.2
Byk 141 (3)	0.4	0.4	0.4
Tinuvin 292 (4)	0.4	0.4	0.4
Bayferrox 415	1.6	1.6	1.6
Chromoxidgrün GN-M	8.7	8.7	8.7
TiO2 rutil	13.1	13.1	13.1
Talkum A.T.1	7.2	7.2	7.2
Solvesso 100	4.9	4.9	4.9
Part B			
Reaxis C 218 10% in BuAc		0.4	
Reaxis C 716 10% in BuAc			0.4
Vestanat HT 2500 L (5)	13.1	13.1	13.1
Solids [% by weight]	68.0	68.0	68.0
Potlife [mins]	>8 hr	128.0	232.0
Viscosity [sec] (DIN-cup 4. 23°C) appr.			

Notes:

(1) acrylic resin; Bayer; OH#=53

(2) Elementis GmbH

(3) Byk-Chemie

(4) Ciba

(5) aliphatic polyisocyanate; Evonik; NCO contnet=19.6%

Curing and Film properties

Catalyst	None	Reaxis C 218	Reaxis C 716
Drying at 23 C in minutes per DIN 53150			
S1	55.0	32.0	36.0
S2	189.0	90.0	130.0
S3	223.0	96.0	136.0
S4	231.0	108.0	175.0
S5	>8 h	155.0	209.0
Pendulum Hardness after 1 day [sec]	74.0	91.0	87.0
Pendulum Hardness after 7 day [sec]	175.0	123.0	136.0

Formulation 3: High-Solid-Polyurethane-Clear-Coat

Formulation

Catalyst	None	Reaxis C 218	Reaxis C 716
Part A			
Synocure 852 BA 80 (1)	46.4	46.4	46.4
Tinuvin 292 (2)	0.3	0.3	0.3
Tinuvin 900 (8% in xylene) (2)	3.4	3.4	3.4
Methoxypropyl acetate MPA	3.0	3.0	3.0
Butyl acetate	13.8	13.8	13.8
Xylene	13.8	13.8	13.8
Part B			
Reaxis C 218		0.1	
Reaxis C 716			0.1
Vestanat HT 2500 L (3)	19.2	19.2	19.2
Solids [% by weight]	54.0	54.0	54.0
Potlife [mins]	> 11 hours	30.0	30.0
Viscosity [sec] (DIN-cup 4. 23°C) appr.	20.0	20.0	20.0

Notes:

(1) acrylic resin; Cray Valley; OH content = 4.1%

(2) stabilizers; Ciba

(3) aliphatic polyisocyanate; Evonik; NCO content = 19.6%

Curing and Film properties

Catalyst	None	Reaxis C 218	Reaxis C 716
Drying at 23 C in minutes per DIN 53150			
S1	> 8h	16.0	29.0
S2		42.0	83.0
S3		54.0	93.0
S4		63.0	118.0
S5		82.0	139.0
Pendulum Hardness after 1 day [sec]	19.0	102.0	102.0
Pendulum Hardness after 7 day [sec]	167.0	175.0	174.0

Formulation 4: High-Solid-Polyurethane-Clear-Coat

Catalyst	None	Reaxis C 218	Reaxis C 716
Part A			
Synocure 852 BA 80 (1)	46.4	46.4	46.4
Tinuvin 292 (2)	0.3	0.3	0.3
Tinuvin 900 (8% in xylene) (2)	3.4	3.4	3.4
Methoxypropyl acetate MPA	3.0	3.0	3.0
Butyl acetate	13.8	13.8	13.8
Xylene	13.8	13.8	13.8
Part B			
Reaxis C 218 (1% in xylene)		0.2	
Reaxis C 716 (1% in xylene)			0.2
Vestanat HT 2500 L (3)	19.2	19.2	19.2
Solids [% by weight]	54.0	54.0	54.0

Potlife [hours]	>11	8.0	>11
Viscosity [sec] (DIN-cup 4. 23°C) appr.	20.0	20.0	20.0

Notes:

(1) Acrylic Resin; Cray Valley

(2) stabilizers; Ciba

(3) aliphatic polyisocyanate; Evonik; NCO Content = 4.1%

Curing and Film properties

Catalyst	None	Reaxis C 218	Reaxis C 716
Drying under low bake conditions			
Surface Dry Time [mins]	60.0	34.0	60.0
Pendulum Hardness after 1 day [sec]	19.0	33.0	28.0
Pendulum Hardness after 7 day [sec]	167.0	175.0	174.0
Drying at 60°C			
Drying time 30 minutes			
Pendulum Hardness after 1 hour [sec]	6.0	8.0	7.0
Pendulum Hardness after 1 day [sec]	11.0	50.0	44.0
Pendulum Hardness after 7 day [sec]	168.0	165.0	168.0
MEK double rubs after 1 hour [num]	-	-	-
MEK double rubs after 1 day [num]	12.0	21.0	17.0
Drying time 60 minutes			
Pendulum Hardness after 1 hour [sec]	9.0	19.0	16.0
Pendulum Hardness after 1 day [sec]	40.0	63.0	65.0
Pendulum Hardness after 7 day [sec]	171.0	170.0	178.0
MEK double rubs after 1 hour [num]	10.0	15.0	14.0
MEK double rubs after 1 day [num]	16.0	21.0	21.0
Drying at 80°C			
Drying time 15 minutes			
Pendulum Hardness after 1 hour [sec]	9.0	108.0	98.0
Pendulum Hardness after 1 day [sec]	66.0	106.0	117.0
Pendulum Hardness after 7 day [sec]	175.0	171.0	174.0
MEK double rubs after 1 hour [num]	7.0	15.0	14.0
MEK double rubs after 1 day [num]	12.0	18.0	18.0