

INEOS
Melamines

Maprenal[®] Resimene[®]

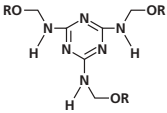
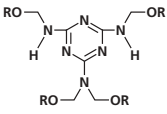
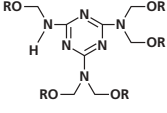
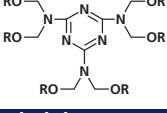
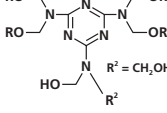


**Amino crosslinking resins
for the coating industry**

Maprenal® Resimene®

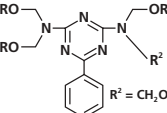
Sales range of Melamine and Benzoguanamine formaldehyde resins according to structure

A) Melamine formaldehyde resins

Tri	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	
	MF 580/55IB	BM 5901 BM 5905	R 717 R 718 AQ 7550 MF 920w/75WA	MF 927/70 IB	VMF 3935/70B	
Tetra	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	
	MF 650/55IB MF 600/55IBB MF 665/651B	R 750 VMF 3611/70B VMF 3615/80B MF 625/65XB	HM 2608 MF 921w/85WA VMF 3926w/75IB MF 915/75IB		CE 6517 VMF 3924/70B	
Penta*	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	
			R 741		R 757 R 758 CE 2202 CE 4514	
Hexa*	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	SAA**
			R 745 R 747 MF 900w/95 MF 904/97	CE 7511 CE 7504	R 751 R 755 CE 7103 CE 6550 MF 905/95	R 797 R 2040
Methylol	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	
	MF 590/55IBX MF 800/55IB MF 800/72IB MF 820/60IB	R 881	R 730 R 735			

* strong acid catalyst required ** SAA = Polystyreneallyl alcohol modified Methylethers

B) Benzoguanamine formaldehyde resins

Benzoguanamine	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	
		MF 980/62B MF 988/80B	MF 984/80B MF 985/80B MF 986/80B			

Maprenal and Resimene suitable for waterborne coatings.

Maprenal and Resimene suitable for waterborne coatings with a higher of co-solvent.

Methylated	Performance properties	Butylated
	Water	
	VOC/Viscosity	
	Wt. Retention (on cure)	
	Cure response	
	Hardness	
	Solvent resistance	
	Wetting, flow, levelling	
	Recoat adhesion	
	Exterior durability	
	Corrosion/humidity resistance	
	Polarity/resistivity	
	Formulated stability	

Abbreviations:

B & nB = n-Butanol, n-Butyl
 BG = Butylglycol
 iB = iso-Butanol, iso-Butyl
 DP = Polydispersity
 E = Ethanol, Ethyl
 FF = Free Formaldehyde
 FP = Flash point
 iP = iso-Propanol
 Me = Methanol, Methyl
 NV = Non volatile
 R = Alcohol
 SAA = Styrene-Allyl-Alcohol
 WA = Water
 X = Xylene

Reactivity	Product	Type/Ether	NV	Solvent	Viscosity		Typical values			
					mPas	Gardner	FF	FP	Density	DP
							%	° C/F	g/ml or lbs/gal	

A - 3) iso-Butylated Melamine resins

Very high	Maprenal MF 580	Tri-iB	54-56	iB	750-1500	UV-XY	0,40	33/91	1,01/8,40	1,90
High	Maprenal MF 590	Methylol-iB	54-56	iB/X	260-460	J+-R-	1,70	33/91	1,01/8,40	2,20
	Maprenal MF 600	Tetra-iB/nB	54-56	iB/nB	260-460	J+-R-	1,00	37/99	0,98/8,20	2,70
	Maprenal MF 650	Tetra-iB	54-56	iB	300-500	L-S	0,70	31/88	0,96/8,00	1,90
	Maprenal MF 665	Tetra-iB	64-66	iB	1400-3300	X+-Z2-	0,70	28/84	1,05/8,80	2,00
Medium	Maprenal MF 800	iB	54-56	iB	220-360	I--O-	2,00	33/91	0,99/8,30	2,50
	Maprenal MF 800	iB	71-73	iB	11000-29000	Z5+-->Z6	1,90	38/101	1,06/8,80	2,50
	Maprenal MF 820	iB	59-61	iB	600-1000	U--W-	1,90	37/99	1,00/8,30	2,60

A - 4) n-Butylated Melamine resins

High	Maprenal VMF 3611	Tetra-nB	69-71	nB	900-2400	W-Y	0,60	39/102	1,02/8,50	1,65
	Maprenal VMF 3615	Tetra-nB	78-82	nB	4800-9200	Z3-Z5	0,60	42/108	1,06/8,80	1,80
	Resimene 5901	Tri-nB	78-82	nB	3300-10700	Z3-Z5	0,40	33/91	1,05/8,70	1,60
	Resimene 750	Tetra-nB	78-82	nB	2270-6340	Z-Z4	0,80	32/90	0,97/8,90	2,20
High-medium	Resimene 5905	Tri-nB	56-60	nB	200-600	E-J	0,80	37/99	0,99/8,25	2,40
	Resimene 881	Methylol-nB, mod.	58-62	B/X	300-400	L-P	0,10	18/65	1,05/8,70	3,50
	Maprenal MF 625	Tetra-nB	63-66	X	1000-3000	V-Y	0,10	18/64	1,03/8,60	3,50

A - 5) Methylated Melamine resins modified with Polystyreneallyl alcohol (SAA)

Low*	Resimene 797	Hexa-Me-SAA (20%)	90-94	Et	890-2270	V-Z	0,10	30/86	1,15/9,55	n. a.
*catalyst required	Resimene 2040	Hexa-Me-SAA (40%)	83-87	Et	1070-2700	W-Z1	0,07	16/61	1,09/9,10	n. a.

B - 1) n-Butylated Benzoguanamine resins

High	Maprenal MF 980	Methylol-nB	61-63	nB	100-300	D-L	2,10	43/110	1,04/8,70	1,20
	Maprenal MF 988	Tri-nB	78-82	nB	5000-10000	Z3+-Z5	0,80	48/118	1,10/9,20	1,40

B - 2) Methylated Benzoguanamine resins

High	Maprenal MF 985	Me mod.	78-82	nB	2000-5000	X+-Z3+	1,2	37/99	1,10/9,20	1,30
medium	Maprenal MF 984	Me	78-82	nB	600-1500	T+-X+	0,8	34/92	1,14/9,50	1,20
	Maprenal MF 986	Tri-Me mod.	78-82	Me	1000-3000	V-W-Z1+	0,8	37/99	1,17/9,75	1,30

A) Melamine formaldehyde resins

Reactivity	Product	Type/Ether	NV	Solvent	Viscosity		Typical values			
					mPas	Gardner	FF	FP	Density	DP
							%	° C/F	g/ml or lbs/gal	

A-1) Methylated Melamine resins

Very high	Maprenal MF 920	Tri-Me	73–77	WA	500–900	S–V	0,50	>100/>210	1,06/8,80	1,30
	Maprenal MF 923	Tri-Me	81–85	WA	2000–6000	Y–Z – Z4-	0,60	31/87,8	1,27/10,55	1,23
	Resimene AQ 7550	Tri-Me	76–81	WA	900–1700	U–W	0,50	>93/>200	1,27/10,55	1,80
High	Resimene 717	Tri-Me	82–86	nB	3800–10670	Z–Z4	0,80	33/92	1,15/9,60	1,40
	Resimene 718	Tri-Me	80–84	iB	2000–6000	Z1–Z4	0,80	31/88	1,14/9,50	1,70
	Maprenal MF 921	Tetra-Me	84–87	WA	3000–7000	Z1+–Z4+	0,50	>100/>210	1,25/10,4	1,30
Medium	Maprenal VMF 3926	Tetra-Me	74–76	iB	2500–6500	Z–Z1–Z4	0,50	35/95	1,13/9,40	1,30
	Resimene 730	Methylol-Me	88–92	iP	3620–14800	Z2–Z6	1,30	22/72	1,19/9,90	1,70
	Resimene 735	Methylol-Me	78–82	iP	550–1070	T–W	1,00	10/50	1,14/9,50	1,70
	Resimene 741	Penta-Me	86–90	iP	1400–6900	W–Z3	0,20	20/68	1,17/9,75	1,70
	Resimene HM 2608	Tetra-Me	88–92	iB	6100–17200	Z2–Z5	0,70	42/107	1,16/9,65	1,40
	Maprenal MF 915	Tetra-Me	74–77	iB	3000–6500	Z1+–Z4	1,50	38/100	1,15/9,60	2,17
Low*	Maprenal VMF 3950	Penta-Me	89–92	iB	2200–3800	Z–Z2+	<0,2	45/113	1,18/9,90	1,25
	Maprenal MF 900	Hexa-Me	>95	no solvent	4500–7200	z3–z4+	0,60	90/128	1,22/10,2	1,25
	Maprenal MF 904	Hexa-Me	>97	no solvent	3000–6500	z1+–z3	0,10	90/128	1,20/10,0	1,25
	Resimene 745	Hexa-Me	>97	no solvent	1760–3620	Y–z2	<0,1	>110/>230	1,20/10,0	1,30
*catalyst required	Resimene 747	Hexa-Me	>97	no solvent	3000–6800	Y–Z3	0,10	>110/>230	1,20/10,0	1,40

A-2) Co-etherified Melamine resins

Very high with catalyst	Maprenal VMF 3935	Tri-Me/nB = 60/40	69–71	nB	1300–2300	X–Z	0,15	38/100	1,04/8,70	1,35	
	Maprenal MF 927	Tri-Me/iB = 90/10	69–71	iB	1100–3900	W–Z2+	0,40	29/84	1,06/8,80	1,80	
High	Maprenal VMF 3924	Tetra-Me/nB = 50/50	69–71	nB	400–1200	P–WX	0,40	42/108	1,04/8,70	1,50	
	Resimene CE 6517	Tetra-Me/nB = 70/30	83–87	nB	1070–3620	W–Z2	0,80	33/91	1,13/9,40	2,20	
Low*	Resimene R 751	Hexa-Me/nB = 50/50	>97	no solvent	275–370	K–O	0,10	>93/>200	1,09/9,10	1,10	
	Resimene R 755	Hexa-Me/nB = 55/45	>97	no solvent	550–1070	T–W	0,05	>77/>170	1,09/9,10	1,40	
	Resimene R 757	Penta-Me/nB = 75/25	>96	no solvent	2270–4630	Z–Z4	0,10	>66/>150	1,13/9,50	1,90	
	Resimene R 758	Penta-Me/nB = 75/25	>98	no solvent	2500–5000	Z ₋ –Z2	0,05	110/230	1,13/9,40	1,50	
	Resimene CE 7103	Hexa-Me/iB = 90/10	>97	no solvent	370–550	O–T	0,05	>94/>200	1,16/9,65	1,10	
	Resimene CE 2202	Penta-Me/nB = 75/25	>97	no solvent	2550–7650	Z–Z3	0,10	66/150	1,13/9,50	1,70	
	Resimene CE 4514	Penta-Me/nB = 55/45	92–96	nB	1070–3620	W–Z2	0,40	60/140	1,11/9,25	2,00	
	Resimene CE 6550	Hexa-Me/nB = 70/30	>97	no solvent	340–550	N–T	0,05	>110/>230	1,09/9,10	1,10	
	Maprenal MF 905	Hexa-Me/nB = 50/50	94–96	mixture	900–1800	V–Y	0,05	57/157	1,03/8,62	1,40	
	Resimene CE 7504	Hexa-Me/iB = 45/55	>97	no solvent	1290–3620	W–Z2	0,10	>110/>230	1,08/8,95	1,40	
	*catalyst required	Resimene CE 7511	Hexa-Me/iB = 75/25	>97	no solvent	1000–1800	U–X	0,10	>110/>230	1,12/9,25	1,30

Remark: – Viscosity and density are measured for: a) Maprenals at 23 °C and 20 °C, b) Resimenes at 25 °C
 – FF, DP are typical values and are intended as a guide and should not be taken as product specifications

About us

INEOS

INEOS is a leading global manufacturer of basic, specialty and intermediate chemicals and comprises 18 businesses each with a major chemical company heritage. Our production network spans 68 manufacturing facilities throughout the world.

We believe INEOS is characterized by the following strengths:

- High-quality and low-cost production facilities
 - Well-invested plants
 - Large plants that benefit from economies of scale
 - Favourable locations
- Experienced management
- Leading market positions
- Significant focus on specialty chemicals
- Operating diversity - products, customers, geographic regions, applications and end-use markets

Our leading market positions allow us to be the supplier of choice for many of the largest customers in our markets. This has translated into strong and long-term relationships with these customers.

INEOS Melamines

INEOS Melamines' roots go back to Melamine resin production facilities founded at the Cassella site in Frankfurt, Germany in 1935 and at the Monsanto site in Springfield, MA, USA in 1946.

With our Melamine resins for coating, technical and specialty applications we are one of the leading players in the relevant markets for our products.

Even though we have been involved in Melamine resin chemistry for more than 75 years, we feel there is still substantial scope for innovation, product development, and applications science to meet the changing requirements of our customers and the markets we are serving.

Responsible Care principles are strictly applied to the health and safety of our own and our customers employees.

Since our beginning we have put our expertise at the service of our customers, employees and our world - and will continue to do so in the future.

	Coating	Wood finishing	Textile	Rubber / Tire	Paper
Products	Maprenal - grades Resimene - grades Hypersal - grades (Additives)	Madurit - grades Hypersal - grades (Additives)	Madurit - grades	Resimene - grades	Madurit - grades
Sites					
Europe America	Frankfurt, Germany Springfield, MA; USA	Frankfurt, Germany	Frankfurt, Germany	Frankfurt, Germany Springfield, MA, USA	Frankfurt, Germany