

## About us

### INEOS Melamines

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

Ineos Melamines is since 2005 part of INEOS, which is one of the leading global chemical companies producing basic, specialty and intermediate chemicals.

Ineos Melamines is serving the paint industry with our amino X-linkers Maprenal and Resimene worldwide. We are one of the leading players in the other relevant markets with 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.

Amino X-linkers 4											
Products	Coating/Paint Industry						Non coating applications/segments				
	Auto-motive	Can	Coil	Metal	Plastic	Wood	Additives	Paper	Laminates/wood finishing	Textile	Rubber/Tire
Maprenal	X	X	X	X	X						
Resimene	X	X	X	X	X	X				X	X
Viamin		X	X	X	X	X					
Hypersal				X			X	X	X	X	
Madurit							X	X	X	X	
Modacure							X				

Amino X-linkers worldwide		
Production sites	Americas Springfield, MA, USA	Europe Frankfurt, Germany
		Asia Surabaya, Indonesia

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# INEOS Melamines

## Maprenal® Resimene®

### X-Linking 4 you. Worldwide.



**Amino crosslinking resins  
for the coating industry**

# Maprenal® Resimene®

Sales range of Melamine and Benzoguanamine formaldehyde resins according to structure

## A) Melamine formaldehyde resins

Structure	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/nB-Ether	
	MF 580/55 IB	BM 5901 BM 5905	R 717 R 718 AQ 7550 AQ 7551 MF 920w/75WA	MF 927/70 IB	CE 1055 CE 1056 CE 1058 CE 1372	
	MF 517/60 IB MF 600/55 IB MF 650/55 IB MF 665/65 IB	R 750 VMF 3611 D/70 B MF 612/70 B MF 625/65X B	AQ 2609 HM 2608 MF 921w/85WA MF 915/75 IB		CE 1052 CE 1062	
			R 741		R 757 R 758 CE 2202 CE 4514 R 764	
			R 745 R 747 MF 900w/95 MF 904/97	MF 909	R 751 R 755 CE 7103 CE 6550 MF 905/95	R 797 R 2040
	MF 590/55 IBX MF 800/55 IB MF 800/72 IB MF 820/60 IB	R 881 R 891	R 730 R 735			

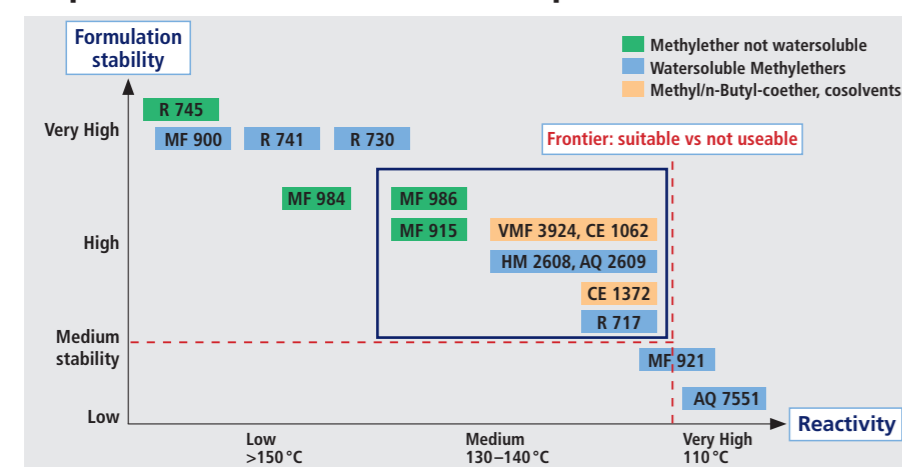
\* strong acid catalyst required \*\* SAA = Polystyreneallyl alcohol modified Methylethers

## B) Benzoguanamine formaldehyde resins

Benzoguanamine	iB-Ether	nB-Ether	Me-Ether	Me/iB-Ether	Me/Et-Ether
		MF 980/62 B MF 988/80 B	MF 984/80 B MF 985/80 B MF 986/80 B		CE 8824

■ Watersoluble Maprenal and Resimene ■ Maprenal and Resimene suitable for waterborne coatings with higher amount of cosolvents

## Maprenal & Resimene for waterborne paints



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## A) Melamine formaldehyde resins

Reactivity	Product	Type/Ether	NV	Solvent	Viscosity		Typical values			
					mPas	Gardner	FF	FP	Density	
							%	* 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
	Resimene AQ 7550	Tri-Me	76-81	WA	630-1070	U-W	0,50	>93/>200	1,27/10,55	1,80
	Resimene AQ 7551	Tri-Me	77-79	WA	600-1000	R+-V-	0,50	>93/>200	1,25/10,46	1,20
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	2700-6340	Z-Z4	0,80	31/88	1,14/9,50	1,70
	Maprenal MF 921	Tetra-Me	84-87	WA	3000-7000	Z1+-Z4+	0,75	>100/>210	1,25/10,4	1,30
	Resimene AQ 2609	Tetra-Me	85-89	WA	1800-6500	X+-Z3+	0,90	>100/>210	1,24/10,31	1,37
	Resimene HM 2608	Tetra-Me	88-92	iB	6100-17200	Z2-Z5	0,70	42/107	1,16/9,65	1,40
Medium	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
	Maprenal MF 915	Tetra-Me	74-77	iB	3000-6500	Z1+-Z4-	1,50	38/100	1,15/9,60	2,17
	Resimene 741	Penta-Me	86-90	IP	1400-6900	W-Z3	0,20	20/68	1,17/9,75	1,70
Low*	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
	Resimene 747	Hexa-Me	>97	no solvent	1760-4630	Y-z3	0,10	>110/>230	1,20/10,0	1,40

\* catalyst required

### A-2) Coetherified Melamine resins

Very high	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
	Resimene CE 1055	Tri-Me/nB	= 53/47	68-72	nB	1500-3000	x+-z1	0,7	35/95	1,08/9,00	1,75
	Resimene CE 1056	Tri-Me/nB	= 63/37	68-72	nB	1000-3000	v+-z1	0,7	35/95	1,07/8,93	1,4
	Resimene CE 1058	Tri-Me/nB	= 30/70	68-72	nB	3500-6500	Z+-Z4-	0,7	35/95	1,08/9,00	2,5
	Resimene CE 1372	Tri-Me/nB	= 60/40	78-82	nB	2500-7500	Z-Z4+	0,7	33/92	1,1/9,2	1,3
High	Resimene CE 1052	Tetra-Me/nB	= 70/30	86-89	nB	2000-7500	Y+-Z4+	0,80	33/92	1,13/9,40	2,20
	Resimene CE 1062	Tetra-Me/nB	= 56/44	80-84	nB	2000-8000	Y+-Z4-	0,70	35/95	1,09/9,10	1,45
Medium	Resimene CE 6559	Tetra-Me/nB	= 50/50	78-82	nB	1500-3500	x+-Z1-z2	0,70	35/95	1,1/9,2	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	nB	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 R 764*	Penta-Me/nB	= 10/90	>98	no solvent	1200-3200	V-Z	0,10	110/230	1,05/8,7	1,70
	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	nB	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	nB	900-1800	V-Y	0,05	57/157	1,03/8,62	1,40
	Maprenal MF 909*	Hexa-Me/iB	= 73/27	91-95	iB	1000-2000	V-Y-	<0,2	61/168	1,04/8,70	1,20

\* catalyst required

■ Maprenal and Resimene suitable for waterborne coatings ■ Maprenal and Resimene suitable for waterborne coatings with a higher amount of cosolvents

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 guides and do not reflect product specifications.

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Reactivity	Product	Type/Ether	NV	Solvent	Viscosity		Typical values			
					mPas	Gardner	FF	FP	Density	
							%	* 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
	Maprenal MF 517	Methylol-iB	59-61	iB	850-1550	UV-XY	1,40	35/95	1,01/8,40	2,10
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 3611D	Tetra-nB	68-72	nB	900-2400	V-Z-	0,60	36/98	1,02/8,50	1,65
	Maprenal MF 612	Tetra-nB	69-71	nB	900-2400	V-Z-	0,50	36/98	1,02/8,50	1,65
	Resimene 5901	Tri-nB	78-82	nB	3300-10700	Z3-Z5	0,40	33/91	1,05/8,70	1,60
High-medium	Resimene 5905	Tri-nB	56-60	nB	200-600	E-J	0,80	37/99	0,99/8,25	2,40
	Resimene 750	Tetra-nB	78-82	nB	2270-6340	Z-Z4	0,80	32/90	0,97/8,90	2,20
	Resimene 881	Methylol-nB, mod.	58-62	B/X	300-400	L-P	0,10	18/65	1,05/8,70	3,50
Medium	Maprenal MF 625	Tetra-nB	63-66	X	1000-3000	V-Y	0,10	18/64	1,03/8,60	3,50
	Resimene 891	Tetra-nB	62-66	nB/X	300-500	L-R	1,00	22/71	1,02/8,55	3,60

### 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.
	Resimene 2040	Hexa-Me-SAA (40%)	83-87	Et	1070-2700	W-Z1	0,07	16/61	1,09/9,10	n.a.

## B) 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) Methylated Benzoguanamine resins

High	Maprenal MF 985	Me mod.	78-82	Me	2000-5000	Y+-Z3	1,2	37/99	1,10/9,20	1,30
Medium	Maprenal MF 986	Tri-Me mod.	78-82	Me	1000-3000	V-Z1+	0,8	37/99	1,17/9,75	1,30
	Maprenal MF 984	Me	78-82	Me	600-1500	S-T-X	0,8	34/92	1,14/9,50	1,20
Low*	Resimene CE 8824	Tetra-Me/Et	98	Me/Et	3800-10200	Z2--Z5-	0,1	46/123	1,15/9,60	1,20

\* catalyst required

Methylated	Performance properties	Butylated	Abbreviations
←	Water	→	BG = Butylglycol
←	VOC/Viscosity	→	FF = Free formaldehyde
←	Wt. retention (on cure)	→	Et = Ethanol, ethyl
←	Cure response	→	Me = Methanol, Methyl
←	Hardness	→	SAA = Styrene Allyl-alcohol
←	Solvent resistance	→	B & nB = n-Butanol, n-Butyl
←	Wetting, flow, leveling	→	DP = Degree of polymerisation
←	Recoat adhesion	→	NV = Non volatile
←	Exterior durability	→	WA = Water
←	Corrosion/humidity resistance	→	iB = iso-Butanol, iso-Butyl
←	Polarity/resistivity	→	DEG = Diethyleneglycol
←	Formulated stability	→	FP = Flash point
			iP = iso-Propanol
			X = Xylene