CYTEC

CYMEL™ and MYCOAT™

Amino Crosslinking Resins

for Coatings and
Specialty Applications
Asia Pacific

Total Solutions Provider

Cytec Industries is one of the worldís leading specialty chemicals and materials technology companies. Our focus is on creating advanced technological solutions for global markets, including aerospace, coatings, mining and plastics.

We are a total solutions provider with a broad range of products, including eco-friendly technologies. We support our customers worldwide with excellent technical service and applications research.

Innovative technology

Cytec's surface specialty products are innovative and diverse, and can help manufacturers realize the competitive advantages of environmental compliance, while also meeting their needs for:
- Improved performance (scratch/stain/corrosion resistance, and adhesion)
- Greater ease of application (required cure response)
- Better finishes (gloss/matte, texture, and specialty)

Broad Product Portfolio

We offer an extensive selection of performance-driven products, including low volatile organic compounds (VOC) and hazardous air pollutant substance-free (HAPS) technologies, for existing and emerging markets:
- Industrial
- Architectural/Construction
- Automotive/Transportation
- Wood/Paper
- Plastic
- Opto-electronics
- Graphic Arts
- Packaging/Adhesives

Our surface specialty product portfolio is inclusive:
- UV/EB energy curable resins
- Liquid coating resins
  - Waterborne
  - High solids
  - Solvent-borne
- Amino crosslinkers
- Powder coating resins
- Coating additives

Global Technical Support

Through our ISO-certified manufacturing facilities, and technology and distribution centers, we are able to provide responsive service on a consistent global basis, and to help our customers identify and profit from emerging opportunities.

Contents

CYMEL™ and *MYCOAT™*

High Solids Methylated Melamine Resins

Product	Non Volatile % 45˚C for 45'	Solvent	Viscosity G-H 25˚C	Viscosity mPa.s. 25˚C	Viscosity mPa.s. 23˚C	Density Kg/M³ approx.	Flashpoint ˚C	Water Solubility	Xylene Solubility	Comments
Highly Methylated Resins										
CYMEL™ 300	98 minimum	-	Waxy Solid	-	-	1200	>100	Insoluble	Complete	Closest composition to HMMM in product line.
CYMEL 301	98 minimum	-	W-Z1	-	-	1200	>100	Insoluble	Complete	Slightly lower alkylation than ***CYMEL 300*** resin. Desirable for waterborne.
CYMEL 303	98 minimum	-	Y-Z2	2600-5000	-	1200	>100	Insoluble	Complete	Most versatile highly methylated melamine resin.
CYMEL 303LF	98 minimum	-	Y-Z2	2600-5000	-	1200	>100	Insoluble	Complete	Same composition as ***CYMEL 303*** resin, but with <0.3% FF specification.
CYMEL 303ULF	98 minimum	-	Y-Z2	2600-5000	-	1200	>100	Insoluble	Complete	Same film performance as ***CYMEL 303*** resin, but with FF specification <0.1%.
CYMEL 350	97 minimum	-	Z2-5	-	5100-16000	1200	>100	Soluble	Partial	Lower alkylation than ***CYMEL 303*** resin. Completely water soluble.
CYMEL 3745	98 minimum	-	-	2000-6500	-	1200	>100	Insoluble	Complete	Similar in composition and film performance to ***CYMEL 301*** resin.
CYMEL 9370	98 minimum	-	-	2000-6000	-	1210	>100	Complete	Partial	Highly methylated melamine resin. Desirable for waterborne.
CYMEL MM-100	98 minimum	-	-	-	10000-25000	1190	>100	Insoluble	Complete	More oligomeric than ***CYMEL 303*** resin. Good water resistance properties.
High Imino Resins										
CYMEL 325	78-82	iso-Butanol	X-Z1	-	2500-4500	1120	37	Partial	Partial	Fast cure response. Does not require a strong acid catalyst. Low HCHO release.
CYMEL 327	88-92	iso-Butanol	Z2-5	-	5100-16000	1180	44	Complete	Partial	Does not require a strong acid catalyst. Fast cure plus good stability.
CYMEL 385	76-81	Water	U-W	-	1000-1600	1250	>100	Complete	Insoluble	Very fast cure in WB. Does not require a strong acid catalyst. Low HCHO release.
CYMEL 701	80-84	iso-Butanol	W-Z3	-	-	1150	34	Soluble	Partial	Fast cure response. Does not require a strong acid catalyst.
CYMEL 3717	82-86	n-Butanol	-	2500-7500	-	1150	35	Partial	Partial	Fast cure response. Does not require a strong acid catalyst. Low HCHO release.
MYCOAT™ 775	68-72 (1)	IPA / BC (2)	W-Z2	-	-	1120	26	Partial	Partial	Fast cure response. Does not require a strong acid catalyst. Low HCHO release.
MYCOAT 776	78-82 (1)	n-Butanol	K-U	-	-	1160	47	Partial	Soluble	Does not require a strong acid catalyst. Fast cure plus good stability.
Partially Methylated Resins										
CYMEL 370	86-90	iso-Butanol	Z2-4	-	5100-10200	1180	46	Partial	Partial	General purpose melamine resin. Fast cure. Does not require a strong acid catalyst.
CYMEL 373	83-87	Water	Y-Z2	-	2500-6000	1260	>100	Complete	Insoluble	Similar performance to ***CYMEL 370*** resin, but supplied in water.

(1) = Non Volatile % JIS Solid 105°C for 180'
(2) = Isopropanol / ethyleneglycol mono butylether

CYMEL™

High Solids Mixed Ether Melamine Resins

Product	Non Volatile % 45˚C for 45'	Solvent	Alkoxy Ratio approx.	Viscosity G-H 25˚C	Viscosity mPa.s. 23˚C	Density Kg/M3 approx.	Flashpoint ˚C	Comments
Highly Alkylated Resins								
CYMEL™ 232	97 minimum (1)	-	Me/nBu	R-W	-	1100	>93	Used in E-coat and high solids coatings.
CYMEL 235	97 minimum (1)	-	Me/nBu	S-X	-	1100	>93	Used in E-coat and high solids coatings.
CYMEL 236	97 minimum (1)	-	Me/nBu	S-X	600-950 (2)	1100	>93	Used in E-coat and high solids coatings.
CYMEL 238	97 minimum	-	Me/isoBu	X-Z3	-	1100	98	High solid, good intercoat adhesion and salt-spray resistance. For automotive top coats, AED coatings and metal finishes.
CYMEL 285-100	97 minimum (1)	-	Me/nBu	X-Z1	-	1100	>93	Used in E-coat and high solids coatings.
CYMEL 1130	96 minimum	-	Me/nBu=3/1	-	3000-6000	1130	>100	Used in E-coat and high solids coatings.
CYMEL 1133	98 minimum	-	Me/nBu=1/1	-	750-1950	1080	>100	Used in high solids coatings. Good film flexibility and recoat adhesion.
CYMEL 1141	83-87	iso-Butanol	Me/isoBu=3/2	W-Y	1400-3000	1080	33	Carboxy functionality. Excellent adhesion to metals.
CYMEL 1161	98 minimum	-	Me/isoBu=3/1	U-X	1050-2000	1130	>100	Methylated-isobutylated version of ***CYMEL 1131*** resin. Excellent intercoat adhesion. Low VOCs.
CYMEL 1168	98 minimum	-	Me/isoBu=1/1	X-Z1	2000-4500	1080	>100	Methylated-isobutylated version of ***CYMEL 1133*** resin. Excellent intercoat adhesion properties.
High Imino Resins								
CYMEL 202	80-84 (1)	n-Butanol	Me/nBu=3/2	Z-Z3	2500-7500	1090	47	Low MW resin. Good balance of reactivity, film flex properties and humidity resistance.
CYMEL 203	70-74 (1)	n-Butanol	Me/nBu=1/1	-	400-800	1040	39	Excellent flow and leveling and adhesion properties.
CYMEL 211	78-82 (1)	n-Butanol	Me/nBu	T-Z	-	1100	43	Low MW resin. Good balance of reactivity, film flex properties and humidity resistance.
CYMEL 250	68.5-72.5 (1)	n-Butanol	Me/nBu	V-Z1	-	1080	32	High MW. Enable to replace conv. butylated type.
CYMEL 251	78-82 (1)	n-Butanol	Me/nBu	V-Z3	-	1100	41	Medium MW resin. Good flow & leveling and adhesion properties.
CYMEL 254	83-87	n-Butanol	Me/nBu=7/3	-	1400-3000	1120	34	Medium MW resin. Good balance of reactivity, film flex properties and humidity resistance.
CYMEL 324	81-85 (1)	n-Butanol	Me/nBu=1/1	W-Z1	-	1120	34	Excellent flow and leveling and adhesion properties.

(1) = Non Volatile % JIS Solid 105°C for 180'

(2) = Viscosity mPa.s 20°C

CYMEL™
Butylated Melamine Resins

Product	Non Volatile %	Solvent	Viscosity G-H 25˚C	Viscosity mPa.s. 25˚C	Viscosity mPa.s. 23˚C	Density Kg/M3 approx.	Hydrocarbon Tolerance approx.	Acid Number minimum	Flashpoint ˚C	Comments
n-Butylated Melamine Resins										
CYMEL ™ MB-14-B	68-72 (2)	n-Butanol	Z1-Z2	-	3800-5600	1060	28 (5)	0-1.5	41	Good compatibility and solvent tolerance.
CYMEL 247-10	62-66 (3)	n-Butanol	U-W	700-1600	-	-	1000 (6)	1.0 max	43	Exellent compatibility, flow and leveling.
CYMEL 615	58-62 (4)	n-But, Xylene	-	1050-2150	-	1010	35 (7)	0.8 max	35	Medium reactivity and general purpose resin.
CYMEL 683	73-77 (4)	n-Butanol	-	3000-6000	-	1070	36 (7)	0.35 max	45	Medium reactivity. Excellent compatibility.
Highly n-Butylated Resins										
CYMEL 1156	96 minimum (1)	-	Z1-Z3	-	-	1050	-	-	>100	Good resistance properties when cured adequately. Very hydrophobic.
CYMEL MB-98	95-99 (2)	-	-	-	1700-4500	1040	>200 (5)	0-1	77	Improves the water resistance of U/F wood finishes. Very hydrophobic.
n-Butylated High Imino Resins										
CYMEL 1158	78-82 (1)	n-Butanol	Z-Z3	-	3000-7000	1060	400 (8)	-	47	High solids. Fast cure response. Low HCHO release.
iso-Butylated Resins										
CYMEL MI-8-I	53-57 (2)	iso-Butanol	-	=	300-500	960	85 (5)	0-1	33	General purpose polymeric butylated melamine resin.
CYMEL MI-12-I	58-62 (2)	iso-Butanol	-	-	1050-1950	970	45 (5)	0-1.5	33	Fast curing. Good compatibility and solvent tolerance but with lower FF content.
CYMEL MI-97-IX	68-72 (2)	iso-But, Xylene	-	-	480-760	1010	>200 (5)	1-3	33	Very hydrophobic. Improves the water resistance of U/F wood finishes.

(1) = Foil Solids 45' at 45˚C
(2) = Pan Solids 60' at 100˚C
(3) = Pan Solids 120' at 105˚C
(4) = Pan Solids 120' at 120˚C

(5) = HC Tolerance, mls of iso-octane tolerated by 10g of resin at 25˚C
(6) = HC Tolerance, lbs of heptane/toluene (3/1) tolerated by 100 lbs of resin solution at 25˚C
(7) = ASTM Tolerance, cc of solvent tolerated by 5g of resin solution at 20˚C
(8) = Naphtha Tolerance

CYMEL™
High Solids Urea Resins

Product	Non Volatile %	Solvent	Viscosity G-H 25˚C	Viscosity mPa.s. 23˚C	Density Kg/M³ approx.	Flashpoint ˚C	Water Solubility	Xylene Solubility	Comments
Methylated Resins									
CYMEL™ U-60	86-90 (1)	isopropanol	X-Z1	-	1180	36	Complete	Partial	Very fast curing in waterborne finishes.
CYMEL U-65	96 minimum (1)	-	Z3-Z6	-	-	>100	Complete	Partial	Good compatibility and cure response.
CYMEL UM-15	96 minimum (1)	-	-	6800-17000	1200	76	Complete	Partial	Good compatibility and cure response.

(1) = Foil Solids 45' at 45˚C

CYMEL™
Butylated Urea Resins

Product	Non Volatile %	Solvent	Viscosity G-H 25˚C	Viscosity mPa.s. 25˚C	Viscosity mPa.s. 23˚C	Density Kg/M³ approx.	Hydrocarbon Tolerance minimum	Acid Number	Flashpoint ˚C	Comments
n-Butylated Resins										
CYMEL™ U-93-210	60-64 (1)	n-But, Xylene	V-Y	-	-	-	250 (8)	2-5	35	Good compatibility. Suitable for epoxy systems.
CYMEL U-216-8	57-61 (2)	n-But, Xylene	S-V	500-1250	-	-	350 (5)	0.5-2	34	Good compatibility. Suitable for epoxy systems.
CYMEL U-610	65-69 (3)	n-Butanol	-	10000-13000	-	1050	10 (6)	2-3	35	Medium reactivity general purpose resin.
CYMEL U-640	58-62 (3)	n-But, Xylene	-	800-1400	-	1025	11 (6)	2-3	25	Low reactivity, excellent compatibility and flow in epoxies. Contains a silicone additive.
CYMEL U-1052-8	54-58 (2)	n-But, Xylene	R-U	-	-	-	350 (5)	2-2.7	34	Fast-curing and compatible resin. Suitable for epoxy systems.
CYMEL U-1054	58-62 (2)	n-But, Ethanol	R-Z1	-	-	-	-	5-7	33	Fast-curing and compatible resin. Suitable for epoxy systems.
CYMEL UB-24-BX	61-65 (4)	n-But, Xylene	-	-	1700-2600	1020	9 (7)	2-5	29	Fast-curing resin for wood finishes and general metals.
CYMEL UB-30-B	63-67 (4)	n-Butanol	-	-	13000-25000	1030	15 (7)	1.3-3	37	Fast-curing resin for wood finishes and general metals.
CYMEL UB-90-BX	63-67 (4)	n-But, Xylene	-	-	700-1100	1020	25 (7)	0.5-3	33	Excellent compatibility with long oil alkyds.
iso-Butylated Resins										
CYMEL U-656	65-69 (3)	iso-Butanol	-	-	13000-19000	1040	-	1.5-3.0	34	Fast drying films. Good stackability, adhesion and film hardness. Air curing wood and industrial stoving applications.
CYMEL U-662	58-62 (3)	iso-But, Xylene	-	-	1200-2400	1010	16 (6)	0.75-1.5	25	Medium-high reactivity. Recommended for wood finishes. Low HCHO emission.
CYMEL U-665	63-67 (3)	iso-Butanol	-	-	3500-6500	1020	-	0.75-1.5	33	Fast drying films. Excellent flow and film gloss. Air curing wood and industrial stoving applications.
CYMEL U-1051	58-62 (2)	iso-But, Xylene	X-Z1	-	-	-	200 (5)	2-10	27	Fast cure and excellent compatibility.
CYMEL UI-19-I	61-65 (4)	iso-Butanol	-	-	8700-16000	1020	9 (7)	0.5-2	34	Fast curing resin for wood finishes. Low formaldehyde emission.
CYMEL UI-20-E	76-80 (4)	Ethanol	-	-	1700-3500	1010	8 (7)	0-1	25	Good cure speed. General purpose resin.
CYMEL UI-38-I	67-71 (4)	iso-Butanol	-	-	12000-20000	1030	20 (7)	1.2-4	-	Used in primers and topcoats for metal substrates. High resistivity.

(1) = Pan Solids 90' at 105˚C
(2) = Pan Solids 120' at 105˚C
(3) = Pan Solids 120' at 120˚C
(4) = Pan Solids 60' at 100˚C
(5) = HC Tolerance, lbs of heptane/toluene (3/1) tolerated by 100 lbs of resin solution at 25˚C
(6) = ASTM Tolerance, cc of solvent tolerated by 5g of resin at 20˚C
(7) = HC Tolerance, mls of iso-octane tolerated by 10g of resin at 25˚C
(8) = Mineral Spirits Tolerance

CYMEL™ and *MYCOAT™*

Benzoguanamine and Glycoluril Resins

Product	Non Volatile % 45˚C for 45'	Solvent	Alkoxy Ratio approx.	Viscosity G-H 25˚C	Viscosity mPa.s. 25˚C	Viscosity mPa.s. 23˚C	Density Kg/M³ approx.	Flashpoint ˚C	Water Solubility	Xylene Solubility	Comments
Benzoguanamine Resins											
CYMEL™ 659	70-74 (1)	n-Butanol	n-Butyl	-	575-1075	-	1065	33	Insoluble	Complete	Low MW and low viscosity butylated resin. Contains a non-silicone flow agent.
CYMEL 1123	98 minimum (2)	-	Me/Eth = 55/45	-	-	3800-10200	1170	>100	Insoluble	Complete	Methylated-ethylated and highly monomeric resin. Strong acid catalyst required. Excellent film flex.
CYMEL 5010	64-68 (3)	n-But, Xylene	n-Butyl	G-M	-	-	1050	27	Insoluble	Complete	n-Butylated and polymeric general purpose resin.
CYMEL 5011	75-79 (4)	n-Butanol	n-Butyl	-	-	3000-6000	1070	37	Insoluble	Complete	n-Butylated and polymeric general purpose resin.
MYCOAT™ 101	68-72 (5)	BC (6)	Me/nBu	S-X	-	-	1100	58	Insoluble	Soluble	Good cure speed. Melamine-benzoguanamine co-condensation.
MYCOAT 106	75-79 (5)	BC (6)	Me	X-Z1	-	-	1150	69	Insoluble	Complete	Typical WB external can coating. Good cure speed.
MYCOAT 136	75-79 (5)	BC (6)	Me/nBu	X-Z2	-	-	1100	54	Insoluble	Complete	Mixed ether version of ***MYCOAT 106***.
Glycoluril Resins											
CYMEL 1171	90 minimum (2)	n-Butanol	Me/Eth = 1/1	Z1-Z3	-	-	1200	>93	Complete	Partial	Highly methylated-ethylated and monomeric resin. WB or solvent-based finishes. Low formaldelyde emission.
CYMEL 1172	43-47(3)	Water	Unalkylated	-	-	<50	1210	>93	Complete	Insoluble	Unalkylated resin for WB finishes. Fast curing.

(1) = Pan Solids 120' at 120˚C
(2) = Foil Solids 45' at 45˚C
(3) = Pan Solids 120' at 105˚C
(4) = Pan Solids 60' at 100˚C
(5) = Non Volatile % JIS Solid 105ºC for 180'
(6) = Ethyleneglycol mono butylether

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