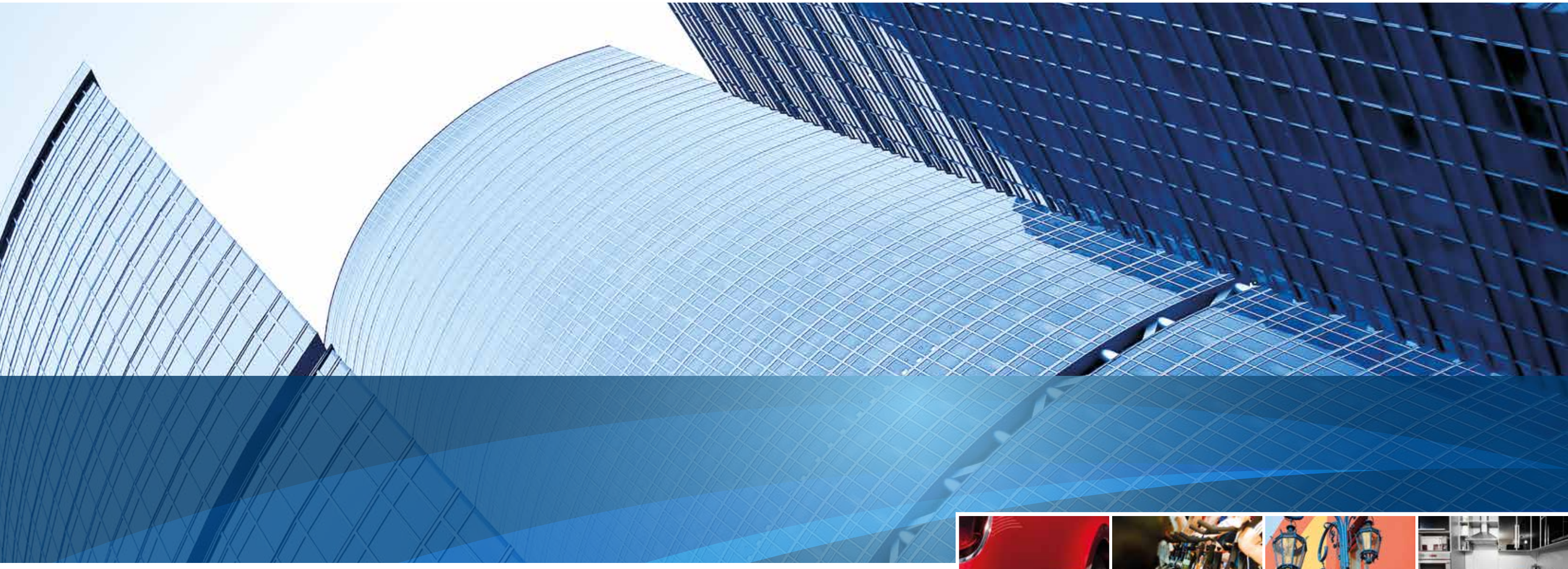
POWDER COATINGS RESINS

Product Guide - Asia Pacific



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About allnex

Facts & Figures

- Global company with over €2.1 billion in sales
- Broad Technology portfolio: liquid coating resins, energy curable resins, powder coating resins, crosslinkers and additives, composites and construction materials
- Approximately 4000 employees
- Customers in more than 100 countries
- 33 manufacturing facilities
- 23 research and technology centers
- 5 ventures
- Extensive range of solutions for key coating segments: automotive, industrial, packaging coating and inks, protective, industrial plastics and specialty architectural

With manufacturing, R&D and technical facilities located throughout Europe, North America, Asia Pacific and Latin America, allnex offers global and reliable supply of resins and additives combined with local, responsive customer support.

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Introduction

Global Supplier
allnex is a worldwide supplier of high-quality powder coating resins, hardeners, and additives. We offer one of the broadest lines of top-name polyester resins, coupled with global product availability, and expert technical support.

Leading-edge Technologies
Right across our global R&D, sales and production network, allnex continues to pioneer the development of innovative technologies to help our partners improve performance and productivity, enter new markets, refine applications and deliver advanced products to meet evolving needs and environmental regulations.

Our products are tailored to suit for for a wide range of applications:

- Superdurable resins for exterior powder applications
- Resins for clearcoat and matte finishes
- Resins for low bake powder systems
- UV curing powder systems

Our newest resin technologies are designed for cutting-edge applications where powder paints are not widely used, including industrial and automotive finishes:

- High-performance exterior durable systems
- Natural and manufactured wood products
- Plastic and other heat-sensitive substrates

Wide Selection of Top Products
As a leading global supplier of powder coating resins, hardeners and additives, allnex offers one of the broadest choices of resins for powder coating finishes.

Proven worldwide, our extensive selection of CRYLCOAT® and SETAPOLL™ polyester resins include carboxyl and hydroxyl functional resins for hybrid, TGIC, glycidylester, hydroxy alkyl amide, urethane, and glycoluril powder coating systems.

For new technologies like UV curable powder coatings, we have one of the widest product ranges available, including UVECOAT® unsaturated resins.

allnex's powder coating resin technologies also include SYNTHACRYL® matting agents, specialty hardeners, and additives which can be supplied on a silica or resin carrier.

For improving flow and leveling characteristics in all types of coatings, the versatile MODAFLOW® powder product family is the benchmark name among flow modifiers and powder resins in the coatings industry.

Bringing value to the formulation of powder coatings are ADDITOL® masterbatch flow modifiers, catalysts and related products. Additionally, BECKOPOX® and ADDITOL specialty hardeners solve problems related to flow, and provide special textures or performance to finished coatings.

Product Index

Product	Description
Vehicle Binder Resins	
CRYLCOAT®	Polyester powder coating resins – Carboxyl (-COOH) resins for hybrid, TGIC, glycidylester and ß-HAA powder coatings – Hydroxyl (-OH) resins for polyurethane and glycoluril powder coatings
SETAPOLL™	Polyester powder coating resins – Carboxyl (-COOH) resins for hybrid, TGIC, glycidylester and ß-HAA powder coatings – Hydroxyl (-OH) resins for polyurethane and glycoluril powder coatings
UVECOAT®	Unsaturated resins for UV curable powder coatings.
Curing Hardeners (Powder Crosslinkers)	
ADDITOL®	Polyanhydride resin for epoxy functional (glycidyl) acrylics and urethane hardeners for hydroxyl functional binder resins (where available)
BECKOPOX®	Anhydride-like resin for epoxy or hydroxy functional binder resins
Powder Additives and Modifiers	
MODAFLOW®	Powder coating flow modifiers on silica carrier
ADDITOL	Flow additives, catalysts and tribo masterbatches provided on resin carriers.
SYNTHACRYL®	GMA-acrylic matting agent

Product Nomenclature

Thermoset powder coatings are typically cured in a temperature range of 160-200°C (object temperature) for 10 minutes. General cure guidelines for products listed in this bulletin are summarized below.

Cure Temperature and Time Definitions	
Slow	190°C or greater for 10 min
Medium	170 - 180°C for 10 min
Fast	160°C for 10 min
Low Temp	150°C or lower for 10 - 30 min

Low temperature cure is used for heat sensitive substrates or thick metallic objects. allnex has products that can achieve the desired results through thermoset or UV cure.

The resin selection guide allows formulators to select resins for a given coating effect. The color background used for each product in the charts helps to delineate special product features, as summarized in the table below. From the wide range of resins available, users can match the desired properties with the required coating performance.

Resin Selection Guide
● CRYLCOAT®* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL new generation hybrids polyester resins
● CRYLCOAT and SETAPOLL polyester resins pair for one-shot matte finishes
● CRYLCOAT and SETAPOLL polyester resins pair for matte dry blends
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing
● ADDITOL®*, MODAFLOW®*, SYNTHACRYL®* systems and additives
● UVECOAT®* unsaturated resins for UV-curable powder coatings

*ADDITOL additives
*CRYLCOAT polyester resins
*MODAFLOW powder flow modifiers
*SETAPOLL polyester resins
*UVECOAT UV-curable resins

The nomenclature of the allnex product line for powder coatings is provided in the table below.

Some of allnex's newer products are referenced with an "E" designation. These resins have been recently developed and have only been commercially available for a short time, and do not follow the product nomenclature system.

Digit 1	Digit 2	Digit 3 & 4	Digit 5
CRYLCOAT® System - 5 Digit System			
1 = Hybrid	5 = 50/50	Whenever possible equivalent to last two digits of former product name	- 0 = Standard (no additives)
	6 = 60/40		- 1 = Tribo
	7 = 70/30		- 2 = Overbake
	8 = 80/20		- 3 = Tribo & Overbake
2 = Standard Outdoor	4 = TGIC		- 4 = Clearcoat
4 = Superdurable Outdoor	5 = PT-910[1]		- 5 = Special
8 = Crystalline	6 = Primid[2]		- 6 = Low bake (< 160°C)
9 = Other	8 = Urethane		

Example: CRYLCOAT 1514-2 = 314
Digit 1: 1 for hybrid; Digit 2: 5 for 50/50; Digit 3 & 4: 14 from 314 and Digit 5: 2 for Overbake

Masterbatch Type	Number
ADDITOL® System	
Flow Aid	P 800 - P 899
Tribo, Catalysts, Crosslinkers	P 900 - P 999

Type	Number
UVECOAT® System	
General Purpose Resins	1000 - 1999
Resins for Metal Substrates	2000 - 2999
Resins for Wood and Plastic	3000 - 3999
Special (i.e., crystalline)	9000 - 9999

Type	Number
SYNTHACRYL® System	
Acrylic - All	700 - 799

[1] Trademark of Huntsman Advanced Materials international LLC
[2] Trademark of EMS-Chemie

Architectural

°C	HAA		TGIC		Urethane
Standard durable					
160	● CRYLCOAT® E 04279				
180	● CRYLCOAT 2618-3		● CRYLCOAT 2450-2	● CRYLCOAT 2443-3	
	● CRYLCOAT 2640-3	● CRYLCOAT 2606-3			
190	● CRYLCOAT 2670-3	● CRYLCOAT 2671-3	● CRYLCOAT 2440-2		● CRYLCOAT 2818-0
	● CRYLCOAT 2650-3				
200			● CRYLCOAT 2441-2	● CRYLCOAT 2411-2	● CRYLCOAT 2814-0
			● CRYLCOAT 2441-3	● CRYLCOAT 2452-2	● CRYLCOAT 2860-0
			● CRYLCOAT 2431-0	● CRYLCOAT 2490-2	● CRYLCOAT 2870-0
			● CRYLCOAT 2415-2	● CRYLCOAT 2491-2	● CRYLCOAT 2876-0
			● CRYLCOAT E 04496	● CRYLCOAT 2453-2	
Super durable					
160	● CRYLCOAT 4643-3		● CRYLCOAT 4442-2		
180	● CRYLCOAT 4698-2				● CRYLCOAT 4890-0
190	● CRYLCOAT 4659-0	● CRYLCOAT 4688-2			
200	● CRYLCOAT 4420-0	● CRYLCOAT 4641-0	● CRYLCOAT 4420-0	● CRYLCOAT 4430-0	● CRYLCOAT 4874-0
	● CRYLCOAT 4629-0	● CRYLCOAT 4642-3	● CRYLCOAT 4488-0	● CRYLCOAT E 04482	● CRYLCOAT 4891-0
	● CRYLCOAT 4645-2	● CRYLCOAT 4679-0			
	● CRYLCOAT 4651-0	● CRYLCOAT 4693-2			

● CRYLCOAT®* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing
● CRYLCOAT and SETAPOLL polyester resins pair for matte dry blends
● CRYLCOAT and SETAPOLL polyester resins pair for one-shot matte finishes

Appliance

°C	50/50		60/40		70/30	
Indoor						
150			● CRYLCOAT 1680-6			
160	● CRYLCOAT® 1540-0					
170			● CRYLCOAT 1620-0			
180	● CRYLCOAT 1510-0	● CRYLCOAT 1514-2	● CRYLCOAT 1627-0	● CRYLCOAT 1648-2	● CRYLCOAT 1770-0	● CRYLCOAT 1781-0
200			● CRYLCOAT 1622-0	● CRYLCOAT 1650-2		

°C	HAA		TGIC	
Outdoor				
180	● CRYLCOAT 2630-2	● CRYLCOAT E 04365		
190			● CRYLCOAT 2440-2	
200			● CRYLCOAT 2441-2	
				● CRYLCOAT 4488-0

● CRYLCOAT* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing

Automotive

°C	50/50		60/40	
Indoor				
160	● CRYLCOAT® 1696-0			
170			● CRYLCOAT 1620-0	
180	● CRYLCOAT 1510-0		● CRYLCOAT 1627-0	
200			● CRYLCOAT 1622-0	● CRYLCOAT 1630-0
			● CRYLCOAT 1660-0	

°C	HAA		TGIC		Urethane
Outdoor					
160			● CRYLCOAT 2499-6		
	● CRYLCOAT 4643-3		● CRYLCOAT 4442-2		
180	● CRYLCOAT 2684-4	● CRYLCOAT 4698-2			
190	● CRYLCOAT 4659-0				
200	● CRYLCOAT 4420-0	● CRYLCOAT 4641-0	● CRYLCOAT 4420-0	● CRYLCOAT 4430-0	● CRYLCOAT 4823-0
	● CRYLCOAT 4642-3	● CRYLCOAT 4679-0	● CRYLCOAT E 04482		

● CRYLCOAT®* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing
● CRYLCOAT and SETAPOLL polyester resins pair for matte dry blends

ACE

°C	HAA		TGIC	
Outdoor				
160			● CRYLCOAT 2499-6	
			● CRYLCOAT 4442-2	
180	● CRYLCOAT® 4698-2			
190	● CRYLCOAT 4688-2			
200	● CRYLCOAT E 04327		● CRYLCOAT 2441-2	
			● CRYLCOAT 4488-0	
			● CRYLCOAT E 04482	

IT & Telecom

°C	50/50	60/40		70/30
Indoor				
160	● CRYLCOAT 1540-0			
180				● CRYLCOAT 1770-0

°C	HAA		TGIC		Urethane
Outdoor					
180	● CRYLCOAT E 04365		● CRYLCOAT 2450-2		
190	● CRYLCOAT 2650-3		● CRYLCOAT 2440-2		
200			● CRYLCOAT 2441-2	● CRYLCOAT 2490-2	● CRYLCOAT 2860-0
			● CRYLCOAT 2441-3	● CRYLCOAT 2491-2	
			● CRYLCOAT 4488-0		

● CRYLCOAT®* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing
● CRYLCOAT and SETAPOLL polyester resins pair for matte dry blends
● CRYLCOAT and SETAPOLL polyester resins pair for one-shot matte finishes

General Industry

°C	50/50		60/40		70/30	
Indoor						
130	● CRYLCOAT® 1572-6					
140	● CRYLCOAT 1506-6					
160	● CRYLCOAT 1540-0	● CRYLCOAT 1593-0				
170			● CRYLCOAT 1620-0		● CRYLCOAT 1701-0	
180	● CRYLCOAT 1573-0		● CRYLCOAT 1648-2		● CRYLCOAT 1703-1	● CRYLCOAT 1791-2
					● CRYLCOAT 1770-0	● CRYLCOAT 1713-1
					● CRYLCOAT 1781-0	
200			● CRYLCOAT 1630-0	● CRYLCOAT 1683-0*	● CRYLCOAT 1702-0	
			● CRYLCOAT 1650-2			

°C	HAA		TGIC		Urethane	Other
Outdoor						
140			● CRYLCOAT E 04431			
160	● CRYLCOAT 2655-6	● CRYLCOAT E 04408	● CRYLCOAT 2499-6			
180	● CRYLCOAT 2618-3	● CRYLCOAT 2695-0	● CRYLCOAT 2421-5	● CRYLCOAT 2450-2		
	● CRYLCOAT 2630-2	● CRYLCOAT 2698-3	● CRYLCOAT 2443-3			
	● CRYLCOAT 2684-4	● CRYLCOAT 2606-3				
	● CRYLCOAT 2661-3	● CRYLCOAT E 04339				
190	● CRYLCOAT 2670-3	● CRYLCOAT 2671-3	● CRYLCOAT 2425-0	● CRYLCOAT 2498-0	● CRYLCOAT 2818-0	
			● CRYLCOAT 2440-2		● CRYLCOAT 2868-0	
200	● CRYLCOAT 2635-2	● CRYLCOAT 2691-2	● CRYLCOAT 2419-2	● CRYLCOAT 2441-3	● CRYLCOAT 2814-0	● CRYLCOAT 2920-0
		● CRYLCOAT E 04487		● CRYLCOAT 2490-2	● CRYLCOAT 2860-0	
			● CRYLCOAT 2431-0	● CRYLCOAT 2491-2	● CRYLCOAT 2890-0	
			● CRYLCOAT 2441-2	● CRYLCOAT 2496-2		
	● CRYLCOAT 4420-0	● CRYLCOAT 4641-0	● CRYLCOAT 4420-0	● CRYLCOAT 4430-0		
		● CRYLCOAT 4642-3	● CRYLCOAT 4488-0			

● CRYLCOAT®* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing
● CRYLCOAT and SETAPOLL polyester resins pair for matte dry blends
● CRYLCOAT and SETAPOLL polyester resins pair for one-shot matte finishes

Furniture

°C	50/50		60/40		70/30	
Indoor						
160	● CRYLCOAT® 1540-0				● CRYLCOAT 1732-0	
170					● CRYLCOAT 1701-0	
180					● CRYLCOAT 1703-1	● CRYLCOAT 1791-2
					● CRYLCOAT 1770-0	● CRYLCOAT 1713-1
					● CRYLCOAT 1781-0	
200			● CRYLCOAT 1630-0	● CRYLCOAT 1650-2	● CRYLCOAT 1702-0	

°C	TGIC	Urethane
Outdoor		
180	● CRYLCOAT 2450-2	
190	● CRYLCOAT 2440-2	
200	● CRYLCOAT 2441-2	● CRYLCOAT 2441-3 ● CRYLCOAT 4891-0
	● CRYLCOAT 2431-0	● CRYLCOAT 2452-2

Special

°C	50/50
MDF	
130	● CRYLCOAT E 04347
	● CRYLCOAT 1545-6
	● CRYLCOAT 1581-6

°C	TGIC
Coil	
180	● CRYLCOAT 2421-5

● CRYLCOAT®* and SETAPOLL™* polyester resins
● CRYLCOAT and SETAPOLL polyester resins for low temperature curing
● CRYLCOAT and SETAPOLL polyester resins pair for matte dry blends
● CRYLCOAT and SETAPOLL polyester resins pair for one-shot matte finishes

Polyester Resins for Hybrid Powder Coatings

Product name	Overbake stable	Tribo	Cure T, °C	Tg, °C	AV (mg KOH/g)	Viscosity, mPa.s	Characteristics
HYBRID 50/50							
CRYLCOAT® 1506-6			140	62	69	9000 (175°C)	Fast cure resin for MDF application.
CRYLCOAT 1510-0			180	62	71	8650 (175°C)	Excellent flow, high gloss with good wettings of fillers and pigments.
CRYLCOAT 1514-2	●		180	55	71	9250 (175°C)	Resin with excellent performance properties.
CRYLCOAT 1540-0			160	58	71	8750 (175°C)	Good balance of properties and good pigment wetting.
CRYLCOAT 1545-6			130	66	72	8200 (175°C)	Low bake, Tin-free, high Tg resin for MDF coating with good mechanical and physical aging stability.
CRYLCOAT 1572-6			130	50	71	4000 (175°C)	Low bake resin for metal application with good mechanical.
CRYLCOAT 1573-0			180	56	70	3500	General purpose resin with good compromise between flow and reactivity.
CRYLCOAT 1581-6			130	52	70	5000	Low bake resin for MDF coatings with high gloss finish.
CRYLCOAT 1593-0			160	54	70	3500	Low bake, good flow-gloss balance.
CRYLCOAT E 04347			130	58	71	6500 (175°C)	Low bake, high Tg resin for MDF coatings, good for sand finish.
HYBRID 60/40							
CRYLCOAT 1616-2	●		200	62	48	3750	General purpose resin with a high Tg and excellent flow.
CRYLCOAT 1620-0			170	54	60	2650	Excellent balance between reactivity and flow.
CRYLCOAT 1622-0			200	55	60	2500	Very good properties and excellent flow. Suitable for use with matting hardeners.
CRYLCOAT 1626-0			180	52	48	3000	New generation hybrid, excellent flow and very good gloss.
CRYLCOAT 1627-0			180	62	44	4000	General purpose resin. High Tg resin with good flow and pigment wetting properties.
CRYLCOAT 1630-0			200	59	62	3000	Low reactive with good storage stability.
CRYLCOAT 1631-0			170	62	62	3000	High Tg resin with very good properties and flow.
CRYLCOAT 1648-2	●		180	60	45	4000	Economic general purpose resin with outstanding boiling water resistance.
CRYLCOAT 1650-2	●		200	55	50	4250	Resin with good response to matting agent.
CRYLCOAT 1660-0			200	50	48	8500 (175°C)	Resin with excellent pigment wetting providing high gloss coatings with excellent flexibility and flow out.
CRYLCOAT 1680-6			150	50	50	10800 (175°C)	Fast cure or low bake resin with good flow and suitable for high filler load.
CRYLCOAT 1683-0			200	73	50	4700	Resin with excellent solvent resistance.
CRYLCOAT 1696-0			160	56	47	4700	Low bake, TMA free resin.
HYBRID 60/40							
CRYLCOAT 1701-0			170	62	36	6300	High Tg resin with good balance of properties. Suitable for fast cure or low temperature cure.
CRYLCOAT 1702-0			200	62	36	5300	Very slow resin with outstanding flow. Uncatalysed version of CRYLCOAT® 1701-0.
CRYLCOAT 1703-1		●	180	56	34	4800	Tribo active and very good balance of properties. Excellent overbake resistance.
CRYLCOAT 1713-1		●	180	56	34	4500	Tribo active with excellent flow and good gloss.
CRYLCOAT 1716-0			180	60	30	6500	Very good flow with very high gloss, can be used for matte coatings.
CRYLCOAT 1732-0			160	57	35	5500	Low bake, good flow combinded with flexibility and mechanical aging stability.
CRYLCOAT 1770-0			180	58	34	5400	Very good balance of properties.
CRYLCOAT 1781-0			180	63	33	5000	General purpose resin. High Tg resin with good flow out.
CRYLCOAT 1791-2	●		180	59	33	5000	For high gloss coatings with good mechanicals, gas-oven stabilized.

Polyester Resins for TGIC Powder Coatings

Product name	Overbake stable	Tribo	Cure T, °C	Tg, °C	AV (mg KOH/g)	Viscosity, mPa.s	Ratio	Characteristics
Standard Durable Resins								
CRYLCOAT® 2411-2	●		200	63	31,5	5250	93/7	Improved mechanical aging and chemical resistance with good flow 93/7 TGIC resin.
CRYLCOAT 2415-2	●		200	69	50	6000	90/10	For matte dry blend system in combination with CRYLCOAT 2452-2 or CC 2691-2 for different gloss level.
CRYLCOAT 2419-2	●		200	62	22,5	7250	95/5	Improved version of CRYLCOAT® 2496-2 in gas-oven and overbake resistance.
CRYLCOAT 2421-5			180	63	33	5200	93/7	Resin developed for use in coil or PCM.
CRYLCOAT 2425-0			190	71	34	6250	93/7	High Tg resin with good balance of properties.
CRYLCOAT 2431-0			200	68	50	4500	90/10	For matte dry blend system in combination with CRYLCOAT 2452-2.
CRYLCOAT 2437-0	●		200	62	33	3900	93/7	TMA free resin with outstanding flow. Excellent outdoor durability.
CRYLCOAT 2440-2	●		190	67	33	5050	93/7	Slightly accelerated version of CRYLCOAT 2441-2.
CRYLCOAT 2441-2	●		200	67	33	5050	93/7	General purpose resin with high Tg and excellent balance of properties.
CRYLCOAT 2441-3	●	●	200	67	32,5	4600	93/7	General purpose resin with high Tg. Tribo version of CRYLCOAT 2441-2.
CRYLCOAT 2443-3	●	●	180	59	33	3750	93/7	Tribo active resin with excellent flow and weathering resistance.
CRYLCOAT 2450-2	●		180	67	33	5050	93/7	General purpose resin with high Tg. Accelerated version of CRYLCOAT 2441-2.
CRYLCOAT 2451-6			130	53	40	1800	93/7	Low bake, with low viscosity providing the combination of excellent flexibility and adhesion, including film hardness.
CRYLCOAT 2452-2	●		200	60	22	8000	96/4	For matte dry blend system in combination with CRYLCOAT 2431-0.
CRYLCOAT 2453-2	●		200	63	35	5300	93/7	Resin designed for excellent boiling water resistance.
CRYLCOAT 2472-4			180	63	32,5	4500	93/7	High Tg version of CRYLCOAT 2471-4, with improved storage stability.
CRYLCOAT 2473-4			170	63	33	3250	93/7	Optimized flow, and transparency at a low temperature.
CRYLCOAT 2490-2	●		200	69	47	4850	90/10	For matt dry blend systems.
CRYLCOAT 2491-2	●		200	62	22	7600	96/4	Low hardener demand in TGIC and Primid (96.5/3.5), slow component in MDB systems.
CRYLCOAT 2496-2	●		200	62	23,5	7250	95/5	Low TGIC content with improved mechanical ageing.
CRYLCOAT 2498-0			190	68	34	8000	93/7	High Tg resin, 93/7 TGIC system with good mechanical ageing.
CRYLCOAT 2499-6			160	64	30	4750	93/7	Low bake formulations with improved flow out, storage stability and less blooming.
CRYLCOAT E 04431			140	59	30	4000	93/7	Low bake for general industry.
CRYLCOAT E 04496	●		200	60	43	3100	92/8	For transfer printing with easy paper peel.
Super Durable Resins								
CRYLCOAT 4420-0			200	64	52	5550	90/10	Fast component for matte dry blend systems in combination with CRYLCOAT 4430-0.
CRYLCOAT 4430-0			200	62	35	2000	93/7	Resin with excellent flow. It can be used with CRYLCOAT 4420-0 for matte dry blend systems.
CRYLCOAT 4432-4			200	62	35	2350	93/7	Superdurable resin with an excellent flow and transparency for clear coat.
CRYLCOAT 4442-2	●		160	59	31	1700	93/7	Low bake TGIC superdurable, excellent flow.
CRYLCOAT 4488-0			200	64	30	5450	93/7	Resin with excellent weathering performance, withstanding 10 years Florida exposure.
CRYLCOAT E 04482			200	62	32	2560	93/7	improved flexibility TGIC super durable.

Polyester Resins for β-HAA Powder Coatings

Product name	Gas oven stable	Overbake stable	Blooming resistance	Tribo	Cure T, °C	Tg, °C	AV (mg KOH/g)	Viscosity, mPa.s	Ratio	Characteristics
Standard Durable Resins										
CRYLCOAT® 2606-3	●	●		●	180	66	33	4500	95/5	Improved water spot resistance.
CRYLCOAT 2618-3	●	●		●	180	61	33	3100	95/5	Tribo active resin with excellent weathering resistance and suitable for use in gas ovens.
CRYLCOAT 2630-2		●			180	62	33	3450	95/5	Resin with excellent flow and degassing properties. Gas oven stabilised and non tribo version of CRYLCOAT® 2617-3.
CRYLCOAT 2635-2		●			200	57	85	3000	-	Fast reacting component in both medium gloss and low gloss One Shot Matte formulations.
CRYLCOAT 2640-3	●	●		●	180	60	21	7250	96/4	Combined good mechanical with outstanding outdoor durability for low demand Primid for architectural application.
CRYLCOAT 2650-3	●	●		●	190	51	70	6200 (175°C)	90/10	For matte dry blend systems (Gloss 20-25%) in combination with CRYLCOAT 2670-3. The resin has an optimised weathering resistance.
CRYLCOAT 2655-6	●	●		●	160	58	48	6000	93/7	Low bake Primid resin, with good mechanical property.
CRYLCOAT 2661-3	●	●		●	180	54	30	3500	95/5	High performance for degassing efficiency with good flow for architectural application. Excellent flow HAA, architectural.
CRYLCOAT 2670-3	●	●		●	190	61	22	6800	97/3	For (co-grindable) matte dry blend systems in combination with high-demand Primid systems. The resin has an optimised weathering resistance.
CRYLCOAT 2671-3	●	●		●	190	58	48	5800	93/7	For matte dry blend formulations (Gloss 35%) with CRYLCOAT 2670-3. The resin has an optimised weathering resistance.
CRYLCOAT 2684-4	●	●			180	58	21	9250	96/4	Resin for low HAA or TGIC content, dual technology for clear coat.
CRYLCOAT 2691-2		●			200	62	21	7600	97/3	For matte dry blend systems or use alone for low demand Primid resin. Slow reacting component in low gloss (10% G60) One Shot Matte formulations.
CRYLCOAT 2695-0					180	59	25	5500	96/4	General purpose resin for low Primid demand formulations (96/4). Slow reacting component in low gloss (15% G60) One Shot Matte formulations.
CRYLCOAT 2696-3	●	●	●	●	160	60	37	4000	95/5	Fast cure resin for industrial use, good overall properties.
CRYLCOAT 2698-3	●	●		●	180	56	33	3000	95/5	Excellent flow out and degassing properties, tribo active.
CRYLCOAT E 04279	●	●	●	●	160	59	32	4500	95/5	Fast cure, low bake for architectural application.
CRYLCOAT E 04339	●	●			180	65	31	4200	95/5	Improved corrosion resistance, industrial use.
CRYLCOAT E 04365					180	58	31	4000	95/5	General purpose resin for industrial or indoor application.
CRYLCOAT E 04408					160	60	31	4000	95/5	Low bake 95/5 HAA resin, with high Tg.
CRYLCOAT E 04453		●		●	180	64	33	3500	95/5	Improved corrosion resistance, architectural use.
CRYLCOAT E 04487		●			200	63	83	3000	-	Fast reacting component in dull matte One Shot Matte formulations together with CC 2691-2 or CC 2695-0.
SETAPOLL™ SP 303	●	●	●		160	58	28	4200	95/5	Low bake, with excellent blooming resistance.
Super Durable Resins										
CRYLCOAT 4420-0			●		200	64	52	5550	92/8	Fast component for matte dry blend systems in combination with CRYLCOAT 4641-0.
CRYLCOAT 4629-0			●		200	57	30	3500	-	Slow reacting component in medium gloss One Shot Matte formulations.
CRYLCOAT 4641-0			●		200	60	20	4250	97/3	Slow component for matte dry blend systems in combination with CRYLCOAT 4420-0.
CRYLCOAT 4642-3	●	●	●	●	200	62	35	1900	95/5	Superdurable resin withstanding 5 years Florida exposure.
CRYLCOAT 4643-3	●	●	●	●	160	62	50	1800	92/8	Low bake 92/8 HAA superdurable resin.
CRYLCOAT 4645-2		●	●	●	200	55	90	2000	-	Fast reacting component in medium gloss One Shot Matte formulations.
CRYLCOAT 4651-0			●		200	59	20	4250	-	Slow reacting component in dull matte One Shot Matte formulations.
CRYLCOAT 4659-0			●		190	59	33	3700	95/5	Superdurable resin with some flexibility and good adhesion. It can be used in HAA and TGIC formulations.
CRYLCOAT 4679-0		●	●		200	63	70	5000	90/10	High AV partner with CC 4641-0 in MDB superdurable to obtain gloss 20%.
CRYLCOAT 4688-2	●	●	●		190	55	31	5500 (175°C)	95/5	Superdurable resin with good flexibility and excellent flow. Suitable for ACE applications.
CRYLCOAT 4693-2		●	●		200	58	88	2250	-	Fast reacting component in dull matte One Shot Matte formulations.
CRYLCOAT 4698-2		●	●		180	61	31	2400	95/5	Superdurable resin with compromised on flow and storage stability.
CRYLCOAT E 04327			●		200	58	33	1500	95/5	Improved corrosion resistance.

Resins and Hardeners for Urethane Powder Coatings

Product name	Cure T, °C	Tg, °C	OHV, mg KOH/g	Viscosity, mPa.s	Characteristics
Standard Durable Resins					
CRYLCOAT® 2814-0	200	52	295	3250	High hydroxyl content, providing high hardness, stain resistance, anti-graffiti property.
CRYLCOAT 2818-0	190	58	100	2750	Good solvent resistance. When used with BECKOPOX EH 694, the coatings exhibit excellent thermal resistance and a high Tg.
CRYLCOAT 2860-0	200	52	50	3500	One shot matte PU formulations with CRYLCOAT® E 04176.
CRYLCOAT 2868-0	190	60	32	6500	High Tg resin with excellent reactivity and flow out.
CRYLCOAT 2870-0	200	54	45	4500	Excellent weathering resistance and good chemical resistance, can be used for One Shot PU with high OH functionality resin.
CRYLCOAT 2872-0	200	55	40	3700	Good mechanical and chemical resistance.
CRYLCOAT 2876-0	200	58	290	4500	Excellent hardness and stain resistance, suitable for anti-graffiti formulations.
CRYLCOAT 2890-0	200	60	30	7250	For low demand isocyanate formulations.
Super Durable Resins					
CRYLCOAT 4823-0	200	57	85	1900	Good flow, mechanical, chemical and weathering resistance.
CRYLCOAT 4874-0	200	52	295	3250	Superdurable resin for One Shot Matte PU formulation with CC 4891-0.
CRYLCOAT 4890-0	180	58	30	5000	Superdurable resin with excellent flow.
CRYLCOAT 4891-0	200	58	31	5500	Superdurable resin for One Shot Matte PU formulation with CC 4874-0.
CRYLCOAT E 04362	200	53	220	3000	Superdurable high OH resin for One Shot Matte PU formulation with CC E 04375, gloss < 5%.
CRYLCOAT E 04375	200	58	30	5000	Superdurable low OH resin for One Shot Matte PU formulation with CC E 04362, gloss < 5%.

Product name	Cure T, °C	Tg, °C	NCO, % w/w	Characteristics
Crosslinkers				
ADDITOL® P 932	200	47	9-10	Crosslinker for OH-Polyester resins based on an aliphatic structure and suitable for outdoor applications.

Polyester Resins for Glycidylester Powder Coatings

Product name	Overbake stable	Tribo	Cure T, °C	Tg, °C	AV (mg KOH/g)	Viscosity, mPa.s	Ratio	Characteristics
Standard Durable Resins								
CRYLCOAT® 2501-2	●		200	73	33	9400	91/9	Outstanding flow out and good mechanical properties.
CRYLCOAT 2506-1		●	180 (15')	67	33	5000	91/9	General purpose for 91/9 stoechiometry with PT-910.
Super Durable Resins								
CRYLCOAT 4540-0			200	67	25	9000	93/7	Superdurable resin with excellent properties.

Acrylic Resins and related products

Product name	Cure T, °C	Tg, °C	EEW, g/eq	Viscosity, mPa.s	Characteristics
GMA acrylic resins for low gloss formulations					
SYNTHACRYL® 700	200 (15')	80	750	39000	Co-resin for the production of dead matt coatings with CRYLCOAT® 2441-2.

Product name	Tg, °C	OHV, mg KOH/g	Characteristics
Crosslinkers			
ADDITOL® P 791	90 (Tm)	310	Aliphatic polyanhydride crosslinker for use with GMA-acrylic resins. The resin is not available at large quantities.
BECKOPOX® EH 694	52	275	Anhydride hardener for use with solid epoxy resins or OH polyester or an additional crosslinker of epoxy/polyester hybrid system. Formulations exhibit chemical and overbake resistance.

Polyester Resins for wrinkle finish

Product name	Cure T, °C	Tg, °C	OHV, mg KOH/g	Viscosity, mPa.s	Characteristics
CRYLCOAT 2920-0	200	67	33	12700	For wrinkle finishes in combination with ADDITOL P 920.
ADDITOL P 920			42	8500	Catalyst master batch for wrinkle finish with CRYLCOAT 2920-0.

Polyester Resins for special purposes

Product name	Cure T, °C	Tg, °C	OHV, mg KOH/g	Viscosity, mPa.s	Characteristics
CRYLCOAT 9240-0	-	58	37	24000	High viscosity resin suitable for cleaning material in extruder.
CRYLCOAT 9246-0	-	62	35	12000	Organic filler for epoxy powder coating or as cleaning material in extruder.
CRYLCOAT 9292-0	180	58	40	4500	Organic filler for epoxy powder coating.

Master batches

Product name	Tg, °C	OHV	AV (mg KOH/g)	Viscosity, mPa.s	Characteristics
Catalyst master batches					
ADDITOL® P 920			42	8500	Catalyst master batch for wrinkle finish with CRYLCOAT 2920-0.
ADDITOL P 964			33	3200	A 5% active catalyst master batch for carboxylic acid/epoxy reaction for use in Hybrid and TGIC system.
ADDITOL P 966			35	1900	A 5% active catalyst master batch in super durable rsin carrier for use in TGIC and AraditeTM PT-910 system.
Flow master batches					
ADDITOL P 824	49	45		1200	Flow promoter master batch with 15% active substance. 3-5% on total formulation weight for pigmented powders. Excellent gloss and flow.
ADDITOL P 890	51	45		3500	Flow promoter master batch with 10% active substance. 7-8% on total formulation weight. No haze. Suitable for clearcoats.
ADDITOL P 891	56		35	2300	Flow promoter master batch with 5% active substance. 7-10% on binder is recommended. No haze. Suitable for clearcoats.
ADDITOL P 896	57	45		1800	Flow promoter master batch with 15% active substance. 3-5% on total formulation weight for pigmented powders.
Tribo master matches					
ADDITOL P 950		30		7500	Tribo master batch with 5% active substance.

Flow promoter

Product name	Appearance	Activity %	Density g/ml	Characteristics
MODAFLOW® POWDER III	Free flowing powder	65	0.58-0.64	Improves leveling and flow out, reduces surface defects, improves substrate wetting and initial adhesion.
MODAFLOW POWDER 6000	Free flowing powder	65	0.58-0.64	Improves leveling and flow out, reduces surface defects and broadens cross compatibility between different powder coatings.

Resins and additives for UV-curable powder coatings

Product name	Tg, °C	Viscosity, mPa.s	Characteristics
Resins and additives for metal applications			
UVECOAT® 2100	57	5500	High Tg resin for metal application with good adhesion up to 70µm.
UVECOAT 2200	54	4500 (175°C)	For metal application with excellent outdoor durability.
UVECOAT 9010	85 (Tm)	350 (100°C)	Semi-crystalline resin to improve flow and flexibility.
UVECOAT 9146	55	55000 (140°C)	Additive to improve hardness and scratch resistance. Unsaturated urethane acrylate for use as a cross-linker in UV powder coating.
UVECOAT 9539	44	4000	Unsaturated Polyester resin providing excellent adhesion as sole binder or combination partner for other UVECOAT resins at metal application.
Resins for wood applications			
UVECOAT 3002	49	4500 (175°C)	For texture finishes for MDF applications and clearcoats on hardwood. Very good chemical and scratch resistances. For indoor uses with improved yellowing resistance.
UVECOAT 3005	48	4000	For texture finishes for MDF applications. Very good chemical and scratch resistances.
Resins for resilient flooring applications			
UVECOAT 3003	49	3500 (175°C)	For resilient flooring applications. Excellent scratch and chemical resistances.
Toners			
UVECOAT T 37621	51	5200 (200°C)	Unsaturated resin developed for a variety of specialty applications, e.g. toners, where a high reactivity combined with a high glass transition temperature is required.

Health, Safety and Product Handling

Toxicity

CRYLCOAT® and SETAPOLL™ polyester products are solid resins with minimal toxicity. MODAFLOW® products have been subjected to acute toxicity and mutagenicity studies.
Details on specific coverage of individual studies are available upon request. Resin containers may contain polymer dust that could be irritating. Prevent dusty conditions and avoid breathing dust. Also, avoid contact with eyes and prolonged or repeated contact with skin. Use only with adequate ventilation. Equipment should be grouded to prevent electrical sparking. For more information on each product, please consult the current material safety data sheet (MSDS) which will be provided by allnex. Take into account the potential risk resulting in formulation with other materials such as catalysts, hardeners, pigments, and fillers.

Storage

BECKOPOX®, CRYLCOAT, SETAPOLL, UVECOAT, SYNTHACRYL® and ADDITOL® resins should be stored according to guidelines mentioned in the material safety data sheet (MSDS) and kept away from heat sources, humidity and direct sunlight. Do not stack more than two pallets high. MODAFLOW powder products should not be stored in environments of high heat or humidity. The ideal storage temperature is between 4 °C (40 °F) and 38 °C (100 °F). Keep away from sparks and flame.

Shelf Stability

BECKOPOX, CRYLCOAT, SETAPOLL, UVECOAT, SYNTHACRYL, and ADDITOL resins have a minimum shelf life of one year after shipment when stored according to guidelines mentioned in the material safety data sheet (MSDS). The shelf life of MODAFLOW powder products is typically at least four years, when stored in the recommended environment.

Packaging Information

CRYLCOAT, SETAPOLL, UVECOAT, SYNTHACRYL, and ADDITOL resins are typically provided in 25 kg (55.1 lb) polyethylene bags. Supersack containers of 500 kg or 1000 kg are available upon request. MODAFLOW powder products are typically provided in 68 kg (150 lbs) fiber drums. Upon special request, 454 kg (1000 lbs) polypropylene bulk bags are available. BECKOPOX is typically provided in 25 kg paper bags with polyethylene in-liner.

Glossary of Terms

Key Word	Description
Acid Value	The amount of KOH, reported in mg, necessary to neutralize the acid content of one gram of polyester.
Blooming	A hazy appearance on the surface of the coating brought on by migration of low molecular weight material during low temperature cure or extended exposure to heat.
Curing Temperature	The metal or object temperature required to fully cure the powder coating system in 10 minutes.
Epoxy Equivalent Weight (EEW)	The weight of resin, in grams, which contains one gram-equivalent of epoxy.
Florida Exposure	Standard outdoor exposure test to approximate the natural weathering performance of a coating under severe conditions. The test panels are exposed in Florida under defined angle direction South.
Glass Transition Temperature (Tg)	The characteristic temperature in °C of an amorphous polymer corresponding to the change from a solid to liquid state as measured by DSC.
Gloss	Degree to which a surface reflects light.
Hydroxyl Value (OHV)	The amount of KOH, reported in mg, equivalent to the hydroxyl content of one gram of polyester.
Hardener	Powder coating raw material that reacts with polyester resin to create cured coating.
Matte	A coating appearance that reflects a minimal amount of light.
Melting Temperature (MT)	The characteristic temperature in °C at which a solid material becomes a liquid.
Partial Acid Value (PAV)	After partial reactions of the anhydride group with a monofunctional alcohol, the amount of KOH, reported in mg, necessary to neutralize the acid content of one gram polymer.
Polyester: Hardener Ratio	Weight ratio between the polyester resin and the hardener recommended for optimal properties.
Storage Stability	The ability of powder coatings to maintain uniform powder flow properties after being subjected to a specified storage condition.
Superdurable	A polyester resin that exhibits extended outdoor weathering characteristics, typically maintaining > 50 % gloss retention after 3 years (EU) and min. 30% gloss retention after 5 years (US) exposed in Florida at defined angle direction South.
Viscosity	The melt viscosity of the polymer, measured with a Brookfield1 viscometer in mPa.s at a specified temperature.
Wrinkle	A unique, special effect finish characterized by closely associated ridge-like structures.