

# POWDER COATING RESINS

PRODUCT GUIDE • Asia Pacific



**Allnex**

*All About Resins*

## FACTS & FIGURES



## About us

- Global company with nearly \$1.5 billion in sales
- Resin portfolio that comprises of more than 80% of solvent-free and waterborne products
- Broad technology portfolio: liquid coating resins, energy curable resins, powder coating resins, crosslinkers and additives
- Approx. 2000 employees
- More than 2500 customers
- 16 manufacturing facilities
- 13 research and technology centers
- 2 joint ventures
- A myriad of solutions for key coating segments: automotive, industrial, packaging coating and inks, protective, consumer electronics & industrial plastics and specialty architectural



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# Introduction to Power Coating Resins and Additives

## One-Source Global Supplier

**Allnex** is a single-source, worldwide supplier of high-quality powder coating resins, hardeners and additives. We offer one of the broadest lines of resins for powder coating finishes, including top-name polyester resins, coupled with global product availability, and expert technical support.

## Leading-edge Technologies

**Allnex** continues to pioneer the development of innovative technologies for a wide range of surfaces:

- Super durable 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™** polyester resins include carboxyl and hydroxyl 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™** acrylic resins and 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 Overview

### Vehicle Binder Resins

Product	Description
<b>CRYLCOAT™*</b>	Polyester powder resins including super durable and semi-crystalline products <ul style="list-style-type: none"> <li>• Hydroxyl (-OH) resins for polyurethane and glycoluril powder coatings.</li> <li>• Carboxyl (-COOH) resins for hybrid, TGIC, glycidylester and β-HAA powder coatings.</li> </ul>
<b>SYNTHACRYL™*</b>	Glycidyl (GMA) acrylic powder resins and matting agents.
<b>UVECOAT™*</b>	Unsaturated resins for UV-curable powder coatings.

### Curing Hardeners (Powder Crosslinkers)

<b>ADDITOL™*</b>	Polyanhydride resin for epoxy functional (glycidyl) acrylics and urethane hardeners (where available) for hydroxyl binder resins.
<b>BECKOPOX™*</b>	Anhydride-like resin for epoxy or hydroxyl functional binder resins.

### Powder Additives And Modifiers

<b>MODAFLOW™*</b>	Powder resins flow modifiers on a silica carrier base.
<b>ADDITOL</b>	Flow additives, catalysts, and tribo masterbatches provided on resin carriers.
<b>SYNTHACRYL</b>	GMA acrylic matting agents.

\*

**ADDITOL** ..... additives  
**BECKOPOX** ..... anhydride hardener  
**CRYLCOAT** ..... polyester resins  
**MODAFLOW** ..... flow modifiers  
**SYNTHACRYL** ..... acrylic resins  
**UVECOAT** ..... UV-curable resins

## Product Nomenclature

Thermoset powder coatings are typically cured in a temperature range of 160°C – 200°C (object temperature) for 10 minutes. Low temperature cure for heat sensitive substrates or for thick metallic objects is achieved through a combination of catalysis and/or longer oven dwell times. 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°C –180°C for 10 min
Fast	160°C for 10 min
Low	Bake 150°C or lower for 10–30 min

Products are presented in this guide using two approaches. The charts and tables in the first section organize products by a powder coating system, and summarize typical resin characteristics.



The second section 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.

Resin Selection Guide	
	<b>CRYLCOAT™</b> polyester resins
	<b>CRYLCOAT</b> new generation polyester resins
	<b>CRYLCOAT</b> polyester resins systems for matte finishes
	<b>CRYLCOAT</b> polyester resins for low temperature curing
	<b>CRYLCOAT</b> Primavera polyester resins
	<b>ADDITOL™, MODAFLOW™, and SYNTHACRYL™</b> systems and additives
	<b>UVECOAT™</b> unsaturated resins for UV-curable powder coatings

From the wide range of resins available, users can match the desired properties with the required coating performance.

As an alternative, UV powders can be applied. The powder is made to flow with a brief IR heating followed by exposure to ultraviolet light.

## Product Nomenclature

The **Allnex** product line for powder coatings has been renamed and renumbered to provide customers with a more logical understanding of the portfolio. The graphic sections of this guide

contains both the new and old product names. Translations describing how the new product names were derived, and what they stand for, are provided in the tables below.

<b>CRYLCOAT™ System - 5 Digit System</b>			
Digit 1	Digit 2	Digit 3 + 4	Digit 5
1 = Hybrid	5 = 50/50 6 = 60/40 7 = 70/30 8 = 80/20	Whenever possible equivalent to last two digits of former product name	- 0 = Standard (no additives) - 1 = Tribo - 2 = Overbake - 3 = Tribo and overbake - 4 = Clear coat - 5 = Special - 6 = Low bake (<160°C)
2 = Standard outdoor 4 = Super durable outdoor 8 = Crystalline 9 = Other	4 = TGIC 5 = PT 910 6 = Primid 8 = Urethane		

Example: **CRYLCOAT 1514-2** = 314

Digit 1:1 for Hybrid; Digit 2:5 for 50/ 50; Digits 3 + 4: 14 from 314 and Digit 5:2 for Overbake.

<b>ADDITOL™ System</b>	
Masterbatch Type	Number
Flow aid	P 800–P 899
Tribo, catalysts, crosslinkers	P 900–P 999

<b>SYNTHACRYL™ System</b>	
Type	Number
Acrylic	700–799

<b>UVECOAT™ System</b>	
Type	Number
General purpose resin	1000–1999
Resins for metal substrates	2000–2999
Resin for wood and plastic	3000–3999
Specialty (i. e. Crystalline)	9000–9999

## Polyester Resins for Hybrid Formulations

CRYLCOAT™	T, °C	TRIBO	OB	NB	T <sub>g</sub> , °C	IAC, mg KOH/g	Viscosity, mPa.s	Characteristics
<b>HYBRID 50/50</b>								
E 04140	200				60	72	10000(175°C)	High T <sub>g</sub> resin with excellent flow out, suitable for thin film coatings.
1510-0	180				62	70	8600(175°C)	Excellent flow, high gloss with good wettings of fillers and pigments.
1514-2	180		●		55	70	9300(175°C)	Resin with excellent performance properties.
1573-0	180				56	70	2500	General purpose resin with good compromise between flow and reactivity.
1540-0	160				58	70	8700(175°C)	Good balance of properties and good pigment wetting.
1506-6	140		●		62	70	5300	Fast cure resin for metal application or for low bake texture formulation for MDF.
E 38051	130				52	70	5000	Low bake resin for MDF coatings, excellent cure response at IRM (medium wave IR)- curing.
E 04347	130				58	70	5000	Low bake, high T <sub>g</sub> resin for MDF coatings, Good for sand finish.
E 04387	130				58	70	5000	Low bake, Tin-free, high T <sub>g</sub> resin for MDF coatings.
<b>HYBRID 60/40</b>								
1683-0	200				73	50	4700	Resin with excellent solvent resistance
1616-2	200				62	48	3800	General purpose resin with a high T <sub>g</sub> and excellent flow.
1622-0	200				55	60	2600	Very good properties and excellent flow. Suitable for use with matting hardeners.
1650-2	200		●		55	50	4200	Resin with good response to matting agent
1660-0	200				50	48	8500	Resin with excellent pigment wetting providing high gloss coatings with excellent flexibility and flow out.
1627-0	180				62	48	4000	General purpose resin. High T <sub>g</sub> resin with good flow and pigment wetting properties
1690-0	180				57	58	9500	55/45 with excellent detergent- and overbake resistance, good flow out.
1631-0	170				62	60	3000	High T <sub>g</sub> resin with very good properties and flow.
1620-0	170				54	60	2700	Excellent balance between reactivity and flow.
1696-0	160				56	50	4800	Low bake resin with good balance of properties.
1680-6	150				50	50	10800(175°C)	Fast cure or low bake resin with good flow and suitable for high filler load.
<b>PRIMAVERA</b>								
1648-2	180		●		60	50	3500	Economic general purpose resin with outstanding boiling water resistance.
<b>HYBRID 70/30</b>								
1702-0	200				62	30	6300	Very slow resin with outstanding flow. Uncatalysed version of CRYLCOAT 1701-0.
1703-1	180	●			56	30	4800	Tribo active and very good balance of properties. Excellent overbake resistance.
1770-0	180				58	34	5500	Very good balance of properties.
1781-0	180				63	34	5000	General purpose resin. High T <sub>g</sub> resin with good flow out.
1791-2	180		●		59	32	6000	For high gloss coatings with good mechanicals, gas-oven stabilized.
E 04384	180				56	30	5000	High filler loading resin with good flow and good storage stability.
1701-0	170				62	30	6300	High T <sub>g</sub> resin with good balance of properties. Suitable for fast cure or low temperature cure. Accelerated version of CRYLCOAT 1702-0.



## Polyester Resins for Primid Based Formulations

CRYLCOAT™	T, °C	TRIBO	OB	GOS	NB	Tg, °C	IAC, mg KOH/g	Viscosity, mPa.s	Binder/Primid Ratio	Characteristics
<b>Standard Durable Resins For High-Medium Gloss Coatings</b>										
2618-3	180	●	●	●		61	33	3500	95/5	Tribo active resin with excellent weathering resistance and suitable for use in gas ovens.
2630-2	180		●	●	●	62	33	3500	95/5	Resin with excellent flow and degassing properties. Gas oven stabilised and non tribo version of CRYLCOAT 2617-3.
2695-0	180			●		59	25	5500	96/4	General purpose resin for low Primid demand formulations (96/4).
2698-3	180	●	●			56	33	3500	95/5	Excellent flow out and degassing properties, tribo active.
2640-3	180	●	●			60	25	7000	96/4	Combined good mechanical with outstanding outdoor durability for low demand Primid for architectural application.
E 04359	180		●			58	25	5000	96/4	Low demand Primid resin with good flow and good milling efficiency for architectural application.
E 04351	180	●	●	●		54	30	2800	95/5	High performance for degassing efficiency with good flow for architectural application.
E 04365	180					58	33	4000	95/5	General purpose resin for industrial or indoor application.
2488-2	170		●			64	34	6000	95/5	Resin suitable for low temperature cure formulations.
2682-1	170	●				64	34	6500	95/5	Resin suitable for low temperature cure formulations.
<b>Resins For Low Temperature Curing</b>										
E 04247	160		●	●	●	60	30	5000	96/4	Fast cure, low bake and low demand Primid resin.
E 04262	160		●	●	●	54	31	4000	95/5	Fast cure, low bake Primid resin with good flow out.
E 04279	160		●	●	●	54	33	7000	95/5	Fast cure, low bake for architectural application.
E 04379	160		●	●	●	54	40	4000	94/6	Fast cure, low bake for architectural application.
2655-6	160	●	●	●		60	50	6000	93/7	Low bake Primid resin, with good mechanical property.
E 37578	140		●		●	57	30	7500	95/5	Super durable resin for low bake with improved flexibility for engineered wood boards. It can be used for TGIC system too.
<b>Resins For Clearcoats (Including Super Durable Type)</b>										
2684-4	180			●		58	23	7700	96/4	Resin for low Primid demand formulations.
<b>Standard Durable Resins For Low Gloss Coatings</b>										
2691-2	200		●			62	22	7600	97/3	For matte dry blend systems or use alone for low demand Primid resin.
2620-2	200		●			58	50	4200	92/8	For matte dry blend systems (Gloss 35%) in combination with CRYLCOAT 2691-2.
2621-2	200		●			62	70 (175°C)	9000 (175°C)	90/10	For matte dry blend systems (Gloss 20-25%) in combination with CRYLCOAT 2691-2.
2670-3	190	●	●	●		61	22	7500	97/3	For (co-grindable) matte dry blend systems in combination with high-demand Primid systems. The resin has an optimised weathering resistance.
2671-3	190	●	●	●		60	50	6000	93/7	For matte dry blend formulations (Gloss 35%) with CRYLCOAT 2670-3. The resin has an optimised weathering resistance.
2650-3	190	●	●	●		53	70 (175°C)	6000 (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.

## Polyester Resins for Primid Based Formulations (continued)

CRYLCOAT™	T, °C	TRIBO	OB	GOS	NB	Tg, °C	IAC, mg KOH/g	Viscosity, mPa.s	Binder/Primid Ratio	Characteristics
<b>Resin Combinations For Matte Dry Blend Powder Coatings</b>										
<i>Resin system for General purpose applications</i>								Gloss 30-35%	CRYLCOAT 2691-2 / CRYLCOAT 2620-2 (50/50)	
								Gloss 20-25%	CRYLCOAT 2691-2 / CRYLCOAT 2621-2 (50/50)	
<i>Resin system for Architecture applications</i>								Gloss 30-35%	CRYLCOAT 2670-3 / CRYLCOAT 2671-3 (50/50)	
								Gloss 20-25%	CRYLCOAT 2670-3 / CRYLCOAT 2650-3 (50/50)	
<b>Super Durable Resins</b>										
4420-0	200				●	64	50	5500	92/8	Fast component for matte dry blend systems in combination with CRYLCOAT 4641-0.
4641-0	200				●	60	22	4300	97/3	Slow component for matte dry blend systems in combination with CRYLCOAT 4420-0.
4642-3	200	●	●		●	62	33	2100	95/5	Super durable resin withstanding 5 years Florida exposure.
4659-0	190				●	59	34	3900	95/5	Super durable resin with some flexibility. It can be used in Primid and TGIC formulations.
4626-0	190				●	64	50	4300(175°C)	92/8	Resin suitable for high Tg coatings.
4688-2	190				●	55	30	5500(175°C)	95/5	Super durable resin with good flexibility and excellent flow. Suitable for ACE applications.
E 04398	180				●	61	31	2400	95/5	Super durable resin with compromise on flow and storage stability.
E 04313	180					55	32	3200(175°C)	95/5	Super durable resin exhibits improved dirt pick up resistance of the coated films, can be used for both TGIC and Primid systems.
<b>Standard Durable Resins For Low Gloss Coatings In One Shot Matte Formulations</b>										
E 04235	200		●		●	57	85	3000		Fast reacting component in both medium gloss and low gloss One Shot Matte formulations.
2691-2	200		●		●	62	23	7600		Slow reacting component in low gloss (10% G60) One Shot Matte formulations.
2499-6	160		●	●	●	64	30	5000		Slow reacting component in low gloss (25% G60) One Shot Matte formulations.
<b>Resin Combinations For One Shot Matte Powder Coatings</b>										
<i>Resin system for General purpose applications</i>								Gloss 10%	CRYLCOAT E 04235 / CRYLCOAT 2691-2 (50/50)	
								Gloss 25%	CRYLCOAT E 04235 / CRYLCOAT 2499-6 (50/50)	
<b>Super Durable Resins For Low Gloss Coatings In One Shot Matte Formulations</b>										
E 04193	200		●		●	58	90	3000		Fast reacting component in dull matte One Shot Matte formulations.
E 04251	200		●		●	59	21	3900		Slow reacting component in dull matte One Shot Matte formulations.
E 04245	200		●		●	55	90	2000		Fast reacting component in medium gloss One Shot Matte formulations.
E 04229	200		●		●	57	30	3500		Slow reacting component in medium gloss One Shot Matte formulations.
<b>Resin Combinations For One Shot Matte Powder Coatings</b>										
<i>Resin system for General purpose applications</i>								Gloss 10%	CRYLCOAT E 04193 / CRYLCOAT E 04251 (50/50)	
								Gloss 25%	CRYLCOAT E 04245 / CRYLCOAT E 04229 (50/50)	

## Polyester Resins for TGIC-Based Formulations

CRYLCOAT™	T <sub>g</sub> , °C	TRIBO	OB	GOS	NB	T <sub>g</sub> , °C	IAC, mg KOH/g	Viscosity, mPa.s	Binder/Primid Ratio	Characteristics
<b>Standard Durable Resins For High And Medium Gloss Coatings</b>										
2430-0	200					69	30	9800	93/7	High Tg resin.
2441-2	200		●			67	33	5000	93/7	General purpose resin with high Tg and excellent balance of properties.
2441-3	200	●	●			67	33	5000	93/7	General purpose resin with high Tg. Tribo version of CRYLCOAT 2441-2.
2491-2	200					62	22	7600	96/4	Low hardener demand in TGIC and Primid (96.5/3.5), slow component in MDB systems.
2496-2	200		●			63	25	7000	95/5	High Tg resin with improved ageing.
2419-2	200		●	●		62	22	7250	95/5	Improved version of CRYLCOAT 2496-2 in gas-oven and overbake resistance.
E 04311	200		●			63	32	5000	93/7	Improved chemical aging and chemical resistance with good flow.
2425-0	190					71	34	5500	93/7	High Tg resin with good balance of properties.
2440-2	190		●			67	33	5000	93/7	Slightly accelerated version of CRYLCOAT 2441-2.
2498-0	190					68	34	8000	93/7	High Tg resin with improved ageing.
2421-5	180		●			63	33	5200	93/7	Resin developed for use in coil or PCM.
2433-2	180 (5)		●			60	33	3500	93/7	Suitable for fast cure formulation.
2450-2	180		●			67	33	5000	93/7	General purpose resin with high Tg. Accelerated version of CRYLCOAT 2441-2.
E 04333	180					59	35	3900	93/7	Tribo active resin with excellent flow and weathering resistance.
2499-6	160		●	●	●	64	30	5000	93/7	Low bake formulations with improved flow out, storage stability and less blooming.
<b>Resins For Clearcoats (Including Super Durable Types)</b>										
4432-4	200			●	●	62	33	7900(175°C)	93/7	Super durable resin with an excellent flow and transparency.
2472-4	180			●		63	33	4500	93/7	High Tg version of CRYLCOAT 2471-4, with improved storage stability.
2464-4	160			●		60	33	3300	93/7	Resin for low temperature cure formulation with excellent flow.
<b>Standard Durable Resins For Low Gloss Coatings</b>										
2431-0	200					68	50	4500	90/10	For matte dry blend system in combination with CRYLCOAT 2452-2.
2452-2	200					60	24	9500	96/4	For matte dry blend system in combination with CRYLCOAT 2431-0.
2490-2	200		●			70	47	4800	90/10	For matte dry blend systems.
<b>Super Durable Resins</b>										
4420-0	200				●	64	50	5500	90/10	Fast component for matte dry blend systems in combination with CRYLCOAT 4430-0.
4430-0	200				●	62	33	2000	93/7	Resin with excellent flow. It can be used with CRYLCOAT 4420-0 for matte dry blend systems.
4488-0	200				●	64	33	5500	93/7	Resin with excellent weathering performance, withstanding 10 years Florida exposure.

## Polyester Resins for Araldite™ PT-910 Based Formulations

CRYLCOAT™	T <sub>c</sub> °C	TRIBO	OB	GOS	NB	T <sub>g</sub> °C	IAC, mg KOH/g	Viscosity, mPa.s	Binder/ PT910 Ratio	Characteristics
<b>Standard Durable Resins For High And Medium Gloss Coatings</b>										
2501-2	200		●			73	33	9400	91/9	Outstanding flow out and good mechanical properties.
2592-1	200	●		●		69	26	9000	93/7	Tribo version of CRYLCOAT 2592-0, excellent flow with good outdoor durability.
2593-0	200 (15')					70	26	10000	93/7	Low reactive resin with excellent flow and good outdoor durability.
2503-2	180		●		●	68	24	8500	93/7	General purpose for 93/7 stoichiometry ratio with Araldite™ PT-910.
2506-1	180 (15')	●		●		67	33	5500	91/9	General purpose for 91/9 stoichiometry ratio with Araldite™ PT-910.
2578-0	170			●		71	33	9000	91/9	Suitable for low temperature cure formulations.
<b>Standard Durable Resins For Low Gloss Coatings</b>										
2502-2	200 (15')		●			70	20	12000	95/5	Slow component for matte dry blend systems in combination with CRYLCOAT 2500-2.
2500-2	200 (15')		●			70	33	9200	91/9	Fast component for matte dry blend systems in combination with CRYLCOAT 2502-2.
2536-0	180					68	40	7000	90/10	Fast component for matte dry blend systems in combination with CRYLCOAT 2502-2.
<b>Resins For Clear Coats</b>										
2505-4	180 (15')	●		●		67	33	5500	91/9	Resin with excellent flow.
<b>Super Durable Resins</b>										
4540-0	200				●	67	25	9700	93/7	Super durable resin with excellent properties.



## Polyester Resins for PU Based Formulations and Crosslinkers

CRYLCOAT™	T, °C	TRIBO	OB	GOS	NB	Tg, °C	IOH, mg KOH/g	AV max, mg KOH/g	Viscosity, mPa.s	Characteristics
<b>Standard Durable Resins</b>										
2890-0	200					60	30	10	7200	For low demand Isocyanate formulations.
2883-0	200					61	50		4000	For use with caprolactam-blocked isocyanates. Excellent flow, hardness and chemical resistance.
2860-0	200					52	50	1	3500	One shot matte PU formulations with CRYLCOAT E 04176.
E 04176	200					58	280	5	4500	Excellent hardness and stain resistance, suitable for anti-graffiti formulations.
2818-0	190				●	58	100	3	3300	Good solvent resistance. When used with BECKOPOX™ EH 694, the coatings exhibit excellent thermal resistance and a high Tg.
2868-0	190					60	30	5	7000	High Tg resin with excellent reactivity and flow out.
<b>Super Durable Resins</b>										
4890-0	180				●	58	30		5000	Super durable resin with excellent flow.
4874-0	200					52	290	4	2700	Super durable resin for One Shot Matte PU formulation with CRYLCOAT E 04290.
E 04290	200					58	31	4	5500	Super durable resin for One Shot Matte PU formulation with CRYLCOAT 4874-0.

ADDITOL™	T, °C	TRIBO	OB	GOS	NB	Tg, °C	NCO, % w/w	Viscosity, mPa.s	Characteristics
<b>Crosslinkers</b>									
P 932	200					47	9-10		Crosslinker for OH-Polyester resins based on an aliphatic structure and suitable for outdoor applications.



## Master Batches

ADDITOL™	Tg, °C	IAC, mg KOH/g	Viscosity, mPa.s	Characteristics
<b>Catalyst Master Batches</b>				
<i>P 964</i>		33	3200	A 5% active catalyst master batch for carboxylic acid/epoxy reaction for use in Hybrid and TGIC system.
<i>P 966</i>		35	3500	A 5% active catalyst master batch in super durable resin carrier for use in TGIC and Araldite™ PT-910 system.
<i>P 920</i>		42	8500	Catalyst master batch for wrinkle finish with CRYLCOAT™ 2920-0.
<b>Flow Master Batches</b>				
<i>P 890</i>	51	45 OH	3500	Flow promoter master batch with 10% active substance. 7-8% on total formulation weight. No haze. Suitable for clear coats.
<i>P 891</i>	56	35	2300	Flow promoter master batch with 5% active substance. 7-10% on binder is recommended. No haze. Suitable for clear coats.
<i>P 824</i>	49	45 OH	1200	Flow promoter master batch with 15% active substance. 3-5% on total formulation weight for pigmented powders. Excellent gloss and flow.
<i>P 896</i>	57	45 OH	1800	Flow promoter master batch with 15% active substance. 3-5% on total formulation weight for pigmented powders.
<b>Tribo Master Batches</b>				
<i>P 950</i>		30 OH	7500 (175°C)	Tribo master batch with 5% active substance.

## Acrylic Resins and Related Products

SYNTHACRYL™	T, °C	Tg, °C	EEW, g/eq	Viscosity, mPa.s	Characteristics
<b>GMA Acrylic Resins For Low Gloss Formulations</b>					
<i>700</i>	200 (15')	80	750	39000	Co-resin for the production of dead matte coatings with CRYLCOAT 2441-2.

Product Name	T, °C	Tg, °C	IAC, mg KOH/g	Viscosity, mPa.s	Characteristics
<b>Crosslinker</b>					
<i>ADDITOL P 791</i>		90 (Tm)	310		Aliphatic polyanhydride crosslinker for use with GMA-acrylic resins. The resin is not available at large quantities.
<i>BECKOPOX™ EH 694</i>		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.

## Flow Promoters

MODAFLOW™	Appearance	Activity (%)	Density (G/MI)	Characteristics
<i>POWDER III</i>	Free flowing powder	65	0.58-0.64	Improves leveling and flow out, reduces surface defects, improves substrate wetting and initial adhesion.
<i>POWDER 6000</i>	Free flowing powder	65	0.58-0.64	Improves leveling and flow out, reduces surface defects and broadens cross compatibility between different powder coatings.

MODAFLOW Powder Flow Modifiers and ADDITOL™ Masterbatch Flow Additive Applications			
Powder System	MODAFLOW Powder III	MODAFLOW Powder 6000	ADDITOL P 896
Epoxy	••	•	
Epoxy-Acrylic Hybrid	•	•	
Epoxy-Polyester Hybrid	••	••	••
Polyester TGIC	•	••	••
Polyester Glycidylester	•	•	•
Polyester Hydroxyalkyl Amide	•	•	•
Acrylic Urethane	••	•	
Polyester Urethane	•	••	••
Glycoluril	•	••	••
Melamine	••	••	••
Glycidyl Methacrylate	•	•	

## Unsaturated Polyester Resins for UV-Powder Formulations

UVECOAT™	Tg, °C	Viscosity, mPa.s	Characteristics
<b>Resins For Metal Applications</b>			
2100	57	5500	High Tg resin for metal application with good adhesion up to 70µm.
2200	54	4500 (175°C)	For metal application with excellent outdoor durability.
<b>Resins For Wood Applications</b>			
3002	49	4500 (175°C)	For texture finishes for MDF applications and clear coats on hardwood. Very good chemical and scratch resistances. For indoor uses with improved yellowing resistance.
3005	48	4000	For texture finishes for MDF applications. Very good chemical and scratch resistances.
<b>Resins For Resilient Flooring Applications</b>			
3003	49	3500 (175°C)	For resilient flooring applications. Excellent scratch and chemical resistances.

## Additives and Co-Resins for UV-Powder Applications

UVECOAT	Tg, °C	Viscosity, mPa.s	Characteristics
9010	85 (Tm)	350 (100°C)	Semi-crystalline resin to improve flow and flexibility.
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.
9539	44	4000	Unsaturated Polyester resin providing excellent adhesion as sole binder or combination partner for other UVECOAT resins at metal application
<b>Toners</b>			
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.



## Other Resins for Various Applications

Product Name	T, °C	T <sub>g</sub> , °C	IAC, mg KOH/g	Viscosity, mPa.s	Characteristics
<b>Polyester Resin For Wrinkle Finish</b>					
<i>CRYLCOAT™ 2920-0</i>	200	67	33	12700	For wrinkle finishes in combination with ADDITOL™ P 920.
<i>ADDITOL P 920</i>			42	8500	Catalyst master batch for wrinkle finish with CRYLCOAT 2920-0.

CRYLCOAT	T, °C	T <sub>g</sub> , °C	IOH, mg KOH/g	Viscosity, mPa.s	Characteristics
<b>Utility Polyester Resins</b>					
<i>9246-0</i>	200	62	35	10000	Resin suitable for cleaning material for extruders.
<i>9292-0</i>	200, 170 (20°)	58	40	4500	Organic filler for epoxy systems.



## Health, Safety and Product Handling

### Toxicity

**CRYLCOAT™** polyester products are solid, non-flammable 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 ground 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

**CRYLCOAT™**, **UVECOAT™**, **SYNTHACRYL™**, and **ADDITOL™** resins should be stored in a dry location at room temperature. Keep away from heat sources 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

**CRYLCOAT™**, **UVECOAT™**, **SYNTHACRYL™**, and **ADDITOL™** resins have a minimum shelf life of one year when stored in a dry location at room temperature. The shelf life of **MODAFLOW** powder products is typically at least four years, when stored in the recommended environment.

### Packaging Information

**CRYLCOAT™**, **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.



## Translation Table

Old Experimental name	New Name
CRYLCOAT™ E 04116	CRYLCOAT 1616-2
CRYLCOAT E 04132	CRYLCOAT 2452-2
CRYLCOAT E 04148	CRYLCOAT 1648-2
CRYLCOAT E 04149	ADDITOL™ P 890
CRYLCOAT E 04155	CRYLCOAT 2655-6
CRYLCOAT E 04174	CRYLCOAT 4874-0
CRYLCOAT E 04219	CRYLCOAT 2419-2
CRYLCOAT E 04220	CRYLCOAT 2640-3
CRYLCOAT E 04281	CRYLCOAT 1791-2
CRYLCOAT E 04299	CRYLCOAT 2499-6
CRYLCOAT E 04397	CRYLCOAT 1713-1
CRYLCOAT E 36988	CRYLCOAT 4688-2
CRYLCOAT E 37250	CRYLCOAT 2650-3

## Definition

Key Word	Description
T, °C	Recommended temperature for the cure of coatings during a period of 10 minutes.
Tg, °C	Glass transition temperature of the resin.
IAC, mg KOH/g	Acid index as expressed by mg KOH per g resin.
IOH, mg KOH/g	Hydroxyl index as expressed by mg KOH per g resin.
EEW, g/eq	Epoxy equivalent weight as expressed by g of resin per equivalent of epoxy group.
NCO, % w/w	Isocyanate content as expressed by g of NCO by 100 g of resin.
Tribo	Resin that can be used in tribo application without additives.
OB	Resin that shows an excellent resistance to overbaking conditions.
GOS	Resin that can be used in gas ovens without discoloration effect.
NB	Resin that shows no blooming effect.
Viscosity	The viscosity of the resin is measured at 200°C (175°C).
Tm, °C	Melt temperature.

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