

Industrial Coatings

Technical Data Sheet

Joncryl[®] 817



Product Description	Joncryl [®] 817 is a solid flake acrylic resin for industrial hybrid powder coating applications.
Key Features & Benefits	<ul style="list-style-type: none">- Good flow- Hardness- Chemical resistance
Chemical Composition	Carboxyl functional acrylic resin

Properties

Typical Characteristics

Appearance	solid flake
Molecular weight (Mw)	14,000
Solids	> 99% wt
Acid number	55
Equivalent weight	1,020
Tg	68°C
Typical combining ratio	60:40

These typical values should not be interpreted as specifications.

Applications

Joncryl[®] 817 is a carboxyl functional, solid grade acrylic resin designed for powder coating applications. When reacted with an epoxy to formulate a hybrid coating, the resultant film displays a good balance of flow, flexibility, hardness, chemical resistance, and color stability.

Like Joncryl[®] 819, Joncryl[®] 817 should be considered as a polyester replacement in hybrid systems where improvements in hardness, chemical resistance and UV resistance are desired. In addition, acrylic hybrids based on Joncryl[®] 817 offer an economical alternative to polyester urethanes when QUV resistance is less critical than hardness and chemical resistance. Joncryl[®] 817 epoxy hybrids produce excellent low gloss coatings that are frequently more economical than polyester or epoxy based low gloss systems.

Joncryl[®] 817 is recommended for applications such as:

- Interior/exterior general metal powder coating applications

Starting Point Formulation

The following starting point formulation is recommended for an initial evaluation of Joncryl[®] 817. Additional optimization of the formulation may be required to achieve desired results for specific applications.

Joncryl[®] 817 Acrylic Hybrid, Formula #14804-181b

Materials	Parts by Weight
Joncryl [®] 817	36.67
Araldite ¹ GT 6063	24.80
Modaflow ² III	1.00
Benzoin	0.30
Ti-Pure ³ R-960	37.00
Actiron ⁴ NXJ 60	0.23
Total	100.00

Formulation Attributes

Pigment:Binder ratio	0.60
Acrylic:Epoxy ratio	60:40
Catalyst level on TRS	0.23%

Extrusion Parameters

BUSS PLK46		APV 19MM Twin Screw	
Zones 1 / 2	60°C / 105°C	Zones 1 / 2 / 3 / 4	25°C / 60°C / 105°C / 105°C
RPM	200	RPM	300

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² Registered trademark of Cytec Industries Inc.

³ Registered trademark of DuPont.

⁴ Registered trademark of Synthron, Inc.

Coating Physical Properties and Chemical Resistance

The following properties are typical for an acrylic hybrid powder coating prepared along the guidelines presented here with Araldite¹ GT 6063 as the epoxy component of this system:

Powder Properties	Formulation	Test Protocol
Gel time @ 200°C	85 Sec	PCI Test Procedure #6
Storage stability	Free flowing	7 Days at 40° C
Film Properties		
Gloss, 60°/20°	94/76	ASTM D-523
Pencil hardness	3H	ASTM D-3363 - 74 Eagle Turquoise
Direct impact resistance	80 in/lbs (92 kg/cm)	ASTM D-2794
Reverse impact resistance	10 in/lbs (12 kg/cm)	ASTM D-2794
Conical mandrel (1/8")	Pass	
Crosshatch adhesion	95%	ASTM D-3359-83
Chemical Resistance		
Fabric softener	Excellent	
Alkali (Easy Off ⁵)	Excellent	2-hour exposure, 24-hour recovery
Brake fluid	4 hours	Spot test, visual inspection & hardness
MEK (double rubs)	100+	PCI test procedure #8
Substrate:	CRS, Bonderite ⁶ 1000	
Cure:	20 minutes at 190°	
Film thickness:	2.0 mils (50.0 µ)	

⁵ Registered trademark of Reckitt Benckiser Inc.

⁶ Registered trademark of Henkel Surface Technologies.

Formulation Guidelines

There is a multitude of epoxy resins available for hybrid applications. Data presented here reflects work with Araldite¹ GT 6063. Many opportunities exist for improvement in properties with alternate epoxies, flow agents, light stabilizers, and catalysts. The product review, *Powder Coatings Acrylic Epoxy Hybrids: Choice of Epoxy*, discusses the effect of epoxy on film properties. Although this review discusses formulating practice with Joncryl[®] 819, the same guidelines have been found to apply to Joncryl[®] 817.

Acrylic hybrids can be formulated to be almost completely compatible with other chemistries commonly used in powder coatings. The product review, *Powder Coatings Acrylic/Polyester Compatibility*, outlines best practices formulation recommendations to guide the development of compatible formulations.

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State, and Local health and safety regulations, thorough ventilation of the workplace, good skin care, and wearing of personal protective equipment.

Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet for Joncryl® 817.

Important

While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, they are provided for guidance only. Because many factors may affect processing or application/use, BASF recommends that the reader make tests to determine the suitability of a product for a particular purpose prior to use. **NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESCRIPTIONS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS.** In no case shall the descriptions, information, data or designs provided be considered a part of BASF's terms and conditions of sale. Further, the descriptions, designs, data, and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability for the descriptions, designs, data or information given or results obtained all such being given and accepted at the reader's risk.

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U.S. & Canada

BASF Corporation
1609 Biddle Avenue
Wyandotte, Michigan 48192
Phone: (800) 231 – 7868
Fax: (800) 392-7429
Email: polyorders@basf.com
Email: edtech_info@basf.com
www.basf.com

Mexico

BASF Mexicana, S.A. de C.V.
Av. Insurgentes Sur # 975
Col. Ciudad de los Deportes
C.P. 03710
Mexico, D.F.
Phone: (52-55) 53-25-27-87
(52-55) 53-25-26-87
Fax: (52-55) 56-11-48-97