

Joncryl[®] 2981

Multipurpose Acrylic Self-crosslinking Dispersion

Market

■ Interior Wood

- ▶ Kitchen Cabinetry
- ▶ Furniture



■ Exterior Wood

- ▶ Decks
- ▶ Siding & Trim (Millwork)

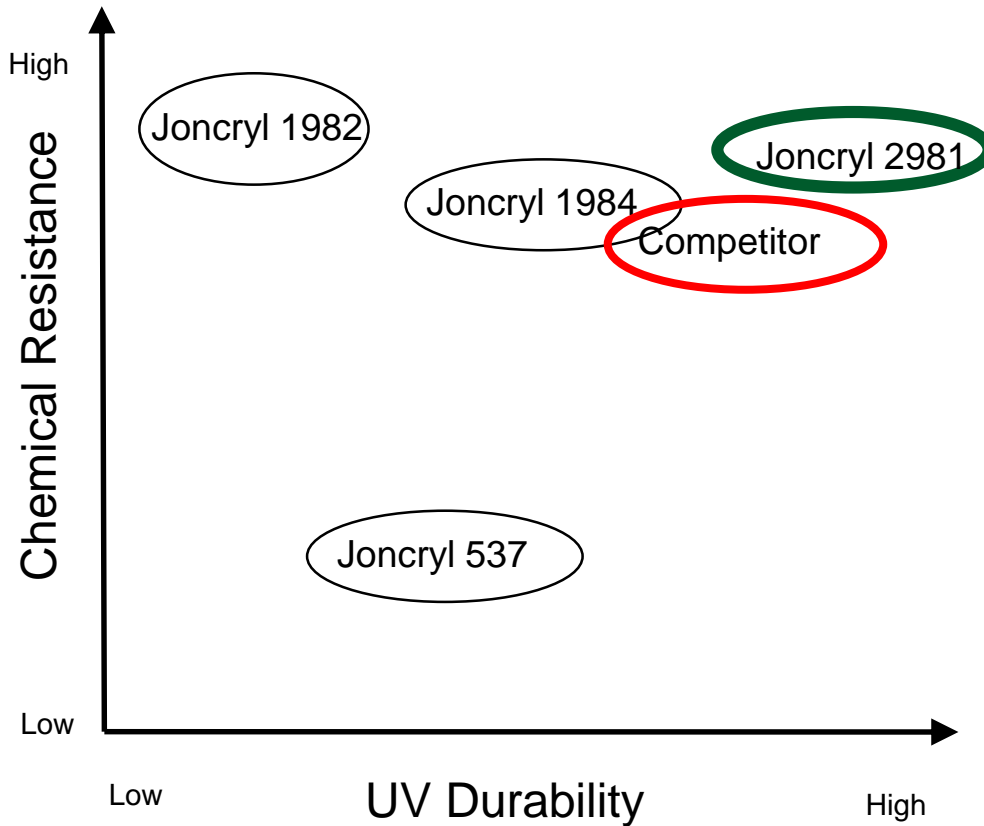


■ General Industrial

- ▶ Top Coat
- ▶ Concrete
- ▶ Maintenance



Positioning



Physical Properties	Values
N.V.	43 - 46%
Viscosity at 25°C	< 500 cps
pH	8.2 – 9.4
MFFT	45°C
Appearance	Semi-translucent emulsion

Joncryl 2981 is a multi-purpose all acrylic, water-based, self-crosslinking dispersion that is highly weatherable with strong chemical resistance

Target Market and Applications

Multipurpose, flexible, versatile

Target substrates

- Ideal substrate is wood but good applicability across multiple substrates
(Can also be used for metal, concrete, and vinyl composite tile.)

Target uses

- Primers, topcoats
- Clear and pigmented coatings
- Blend vehicle

Target applications

- Interior wood – furniture, kitchen cabinets, moldings, specialty hardboard
 - ▶ *Exterior wood and metal – joinery, building products*
 - ▶ *Blend vehicle with Joncryl 1980 and Joncryl PRO series of products*
- Other potential areas: Metal topcoat for most general industrial applications

Target customers

- Customers needing superior warmth of wood and clarity, as well as excellent chemical resistance
- Former and current Joncryl 1982 users, particularly those needing a weatherable, all acrylic version of Joncryl 1982

Value Proposition

Joncryl 2981 is a multi-purpose all acrylic, water-based, self-crosslinking dispersion especially suited for performance across multiple substrates

FEATURES

Highly weatherable and chemical resistant

Superior warmth of wood or Aufeuerung

Multi-purpose capabilities; unmatched versatility

Excellent block resistance

Convenience of one component

Suitable as a metal top coat for most GI applications

Attractive pricing relative to competitive offerings

Sustainable formulation as low as 130 g/L VOC



BENEFITS

- ✓ **Avoid use of a surfactant; reducing raw material costs**
- ✓ **Decrease water sensitivity**
- ✓ **Longer use life between recoats**
- ✓ **Complexity reduction**

Joncryl 2981

WOOD APPLICATION

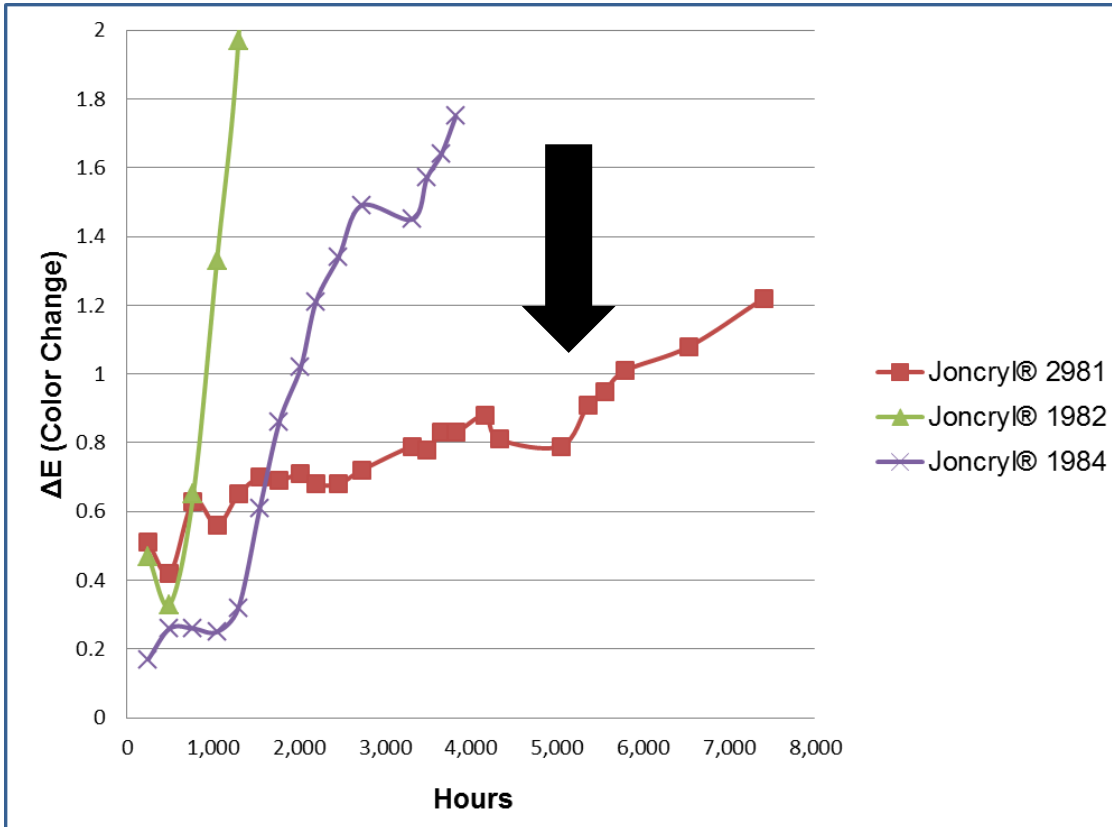
Joncryl 2981 Clearcoat Starting Point Formula

Materials	Pounds	Gallons
Joncryl 2981	567.45	64.70
Hydropalat® WE 3320	3.25	0.37
Premix the next three materials:		
Water	188.38	22.60
Dipropylene glycol methyl ether (DPM)	22.24	2.79
Dipropylene glycol n-butyl ether (DPnB)	46.92	6.20
Then and add:		
FoamStar® ST 2436	1.78	0.22
Joncryl Wax 26	21.12	2.58
Hydropalat WE 3322	1.52	0.18
Hydropalat WE 3370	0.54	0.06
Rheovis® PU 1250 NC	2.64	0.30
TOTAL	855.84	100.0

Formulation Attributes

Solids	31.0% by wt, 30.35% by volume
pH	~8.8
Density	8.56 lb/gal
VOC (calculated)	214 g/l (1.78 lb/gal)

Joncryl 2981 Excellent Weathering

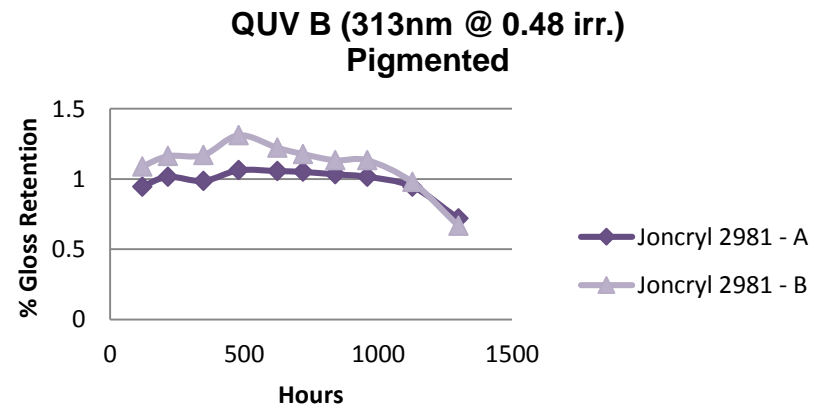
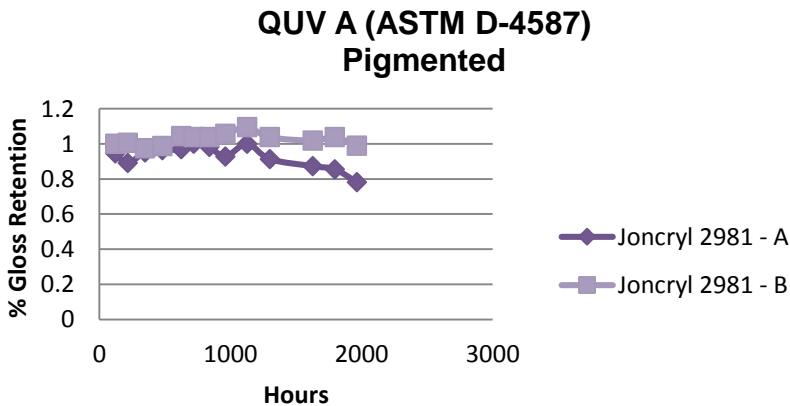
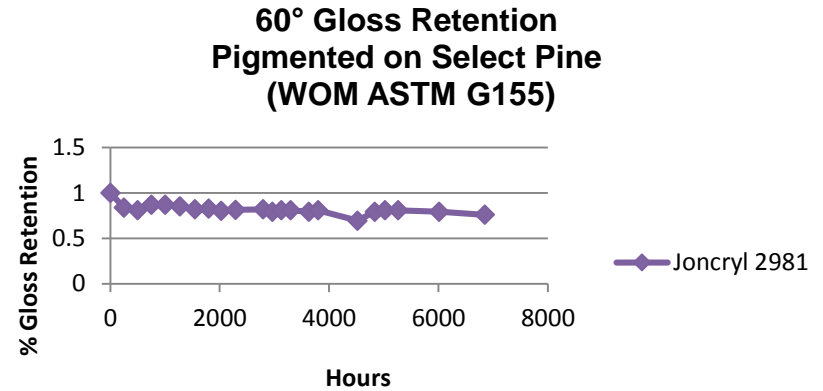
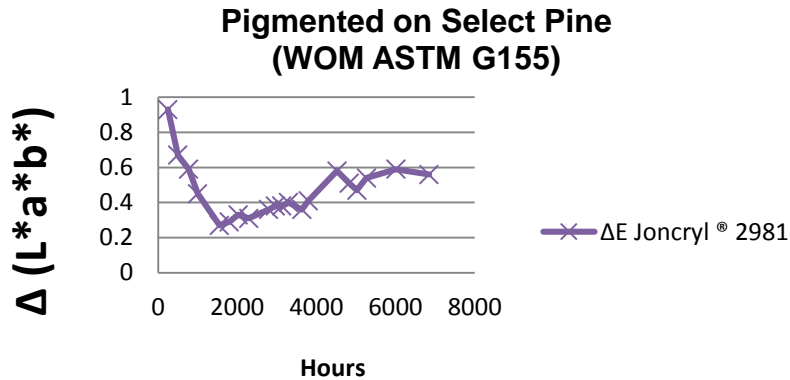


- Xenon weatherometer, (Q-Sun, G-155, cycle 1)
- ~ 6000 hours with a $\Delta E < 1$, color change is just becoming visible at that point
- Clear coat

Superior weatherability minimizes color changes for clear coating applications

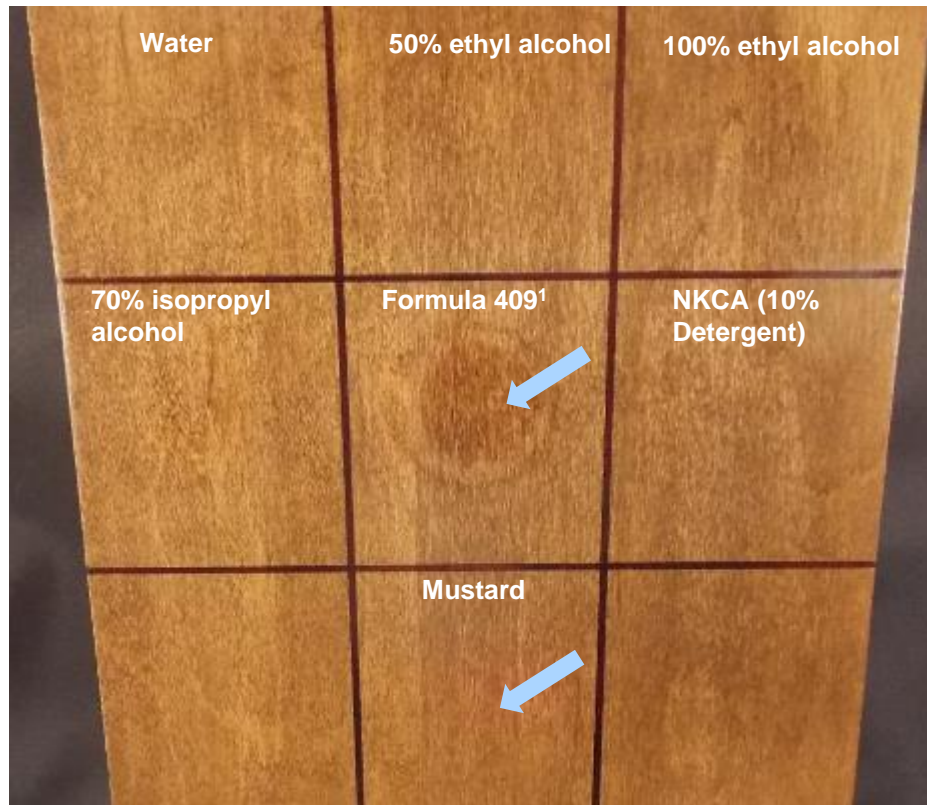
Product Benefits: Excellent Weathering

Joncryl 2981's superior weatherability minimizes color changes and maintains gloss for pigmented coating applications

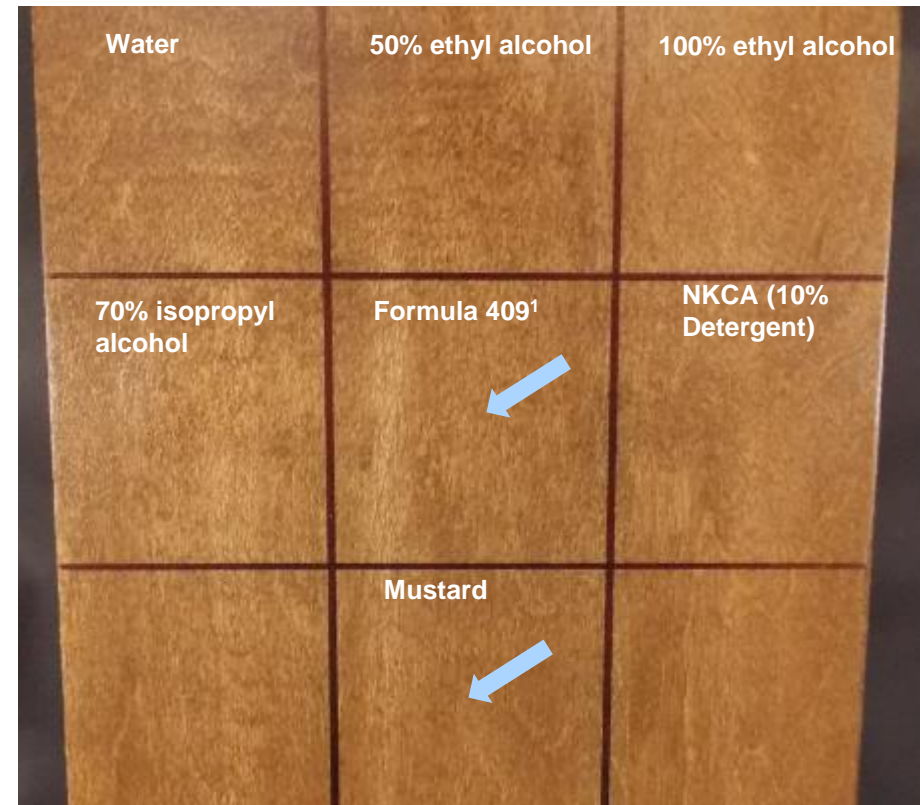


Product Benefits: Excellent Chemical Resistance

Competitive Offering



Joncryl 2981

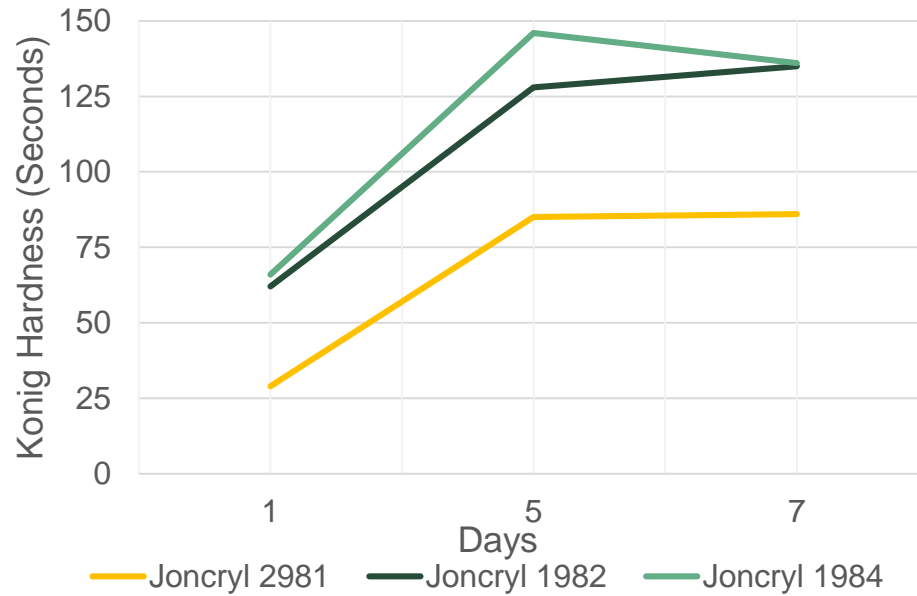


Coating manufacturers can offer superior chemical resistance to customers

¹Registered trademark of The Clorox Company.

Joncryl 2981 Hardness Development

Hardness Development



Joncryl 2981 – Formula# ESC-53 Clear
Joncryl 1982 – Formula# J1982 Clear 8
Joncryl 1984 – Formula# 490S91

Product Benefits: Block Resistance, UV Durability, Cold Check

Block Resistance

- 130°F for 60 minutes @ 110 PSI
- Panels were stuck together, but exhibited no transfer or coating removal when separated (Pigmented)
- Clear coat passes 800 PSI @ 25°C

UV Durability

- Excellent 60° gloss retention in clear and pigmented systems after 6000 hour weatherometer exposure
- Minimal color change ($\Delta E < 1$) of both systems under same conditions

Cold Check

- One cycle = 1 hour in 120°F oven, 1 hour in - 5°F freezer
- No checking or cracking after 5 cycles

Joncryl 2981

GENERAL INDUSTRIAL APPLICATION

Joncryl 2981

DTM/Topcoat Starting Point Formula

Materials	Pounds	Gallons
<i>GRIND</i>		
DI Water	47.22	5.67
Dispex CX 4230	1.88	0.20
Dispex Ultra FA 4416	0.43	0.05
FoamStar ST 2446	2.38	0.29
Ti-Pure ¹ R-900	137.49	4.13
High shear disperse for 20 minutes, then add:		
DI Water	20.14	2.42
<i>LET DOWN</i>		
Joncryl 2981	635.75	73.92
Premix and add:		
DI Water	18.63	2.24
Propylene glycol n-butyl ether (PnB)	19.57	2.68
Dipropylene glycol n-butyl ether (DPnB)	34.95	4.60
TexanoI ²	19.57	2.48
Then add:		
Rheovis PU 1191	2.24	0.26
Flash-X ³ 150	3.93	0.41
Hydropalat WE 3370	3.53	0.40
FoamStar SI 2210 NC	1.96	0.25
TOTAL	949.69	100.0

Formulation Attributes

Solids	45.2% by wt, 38.1% by volume
pH	~8.5
Stormer Viscosity (KU) at 25°C	85 – 90 KU
Density	9.5 lb/gal
VOC (calculated)	193.3 g/l (1.61 lb/gal)
PVC	11.4% by volume

¹ Registered trademark of The Chemours Company TT, LLC.

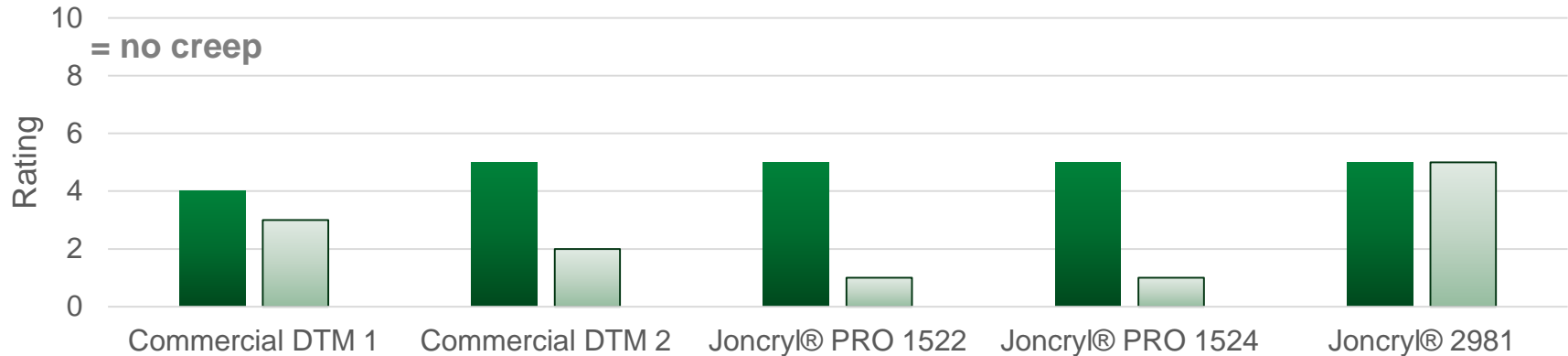
² Trademark of Eastman Chemical Company.

³ Registered trademark of ICL Performance Products LP.

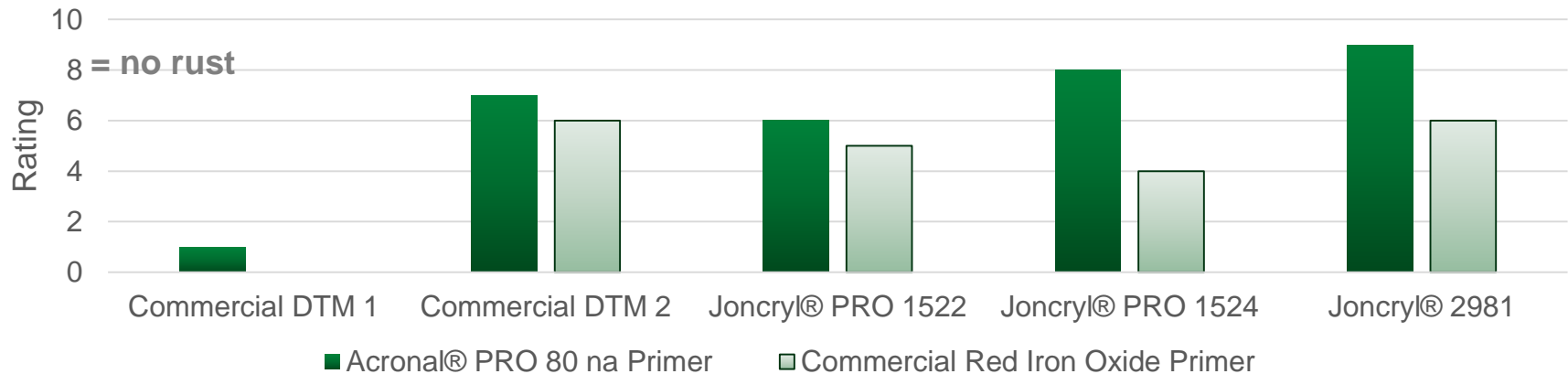
Testing over Primer

Salt-spray Testing (ASTM B-117, 695 hours) – Acronal® PRO 80 na

Scribe Creep Rating



Field Rusting Rating



Acronal PRO 80 na Salt-spray Testing (ASTM B-117)

Topcoated Acronal PRO 80 na Red Primer, 975 hours SST

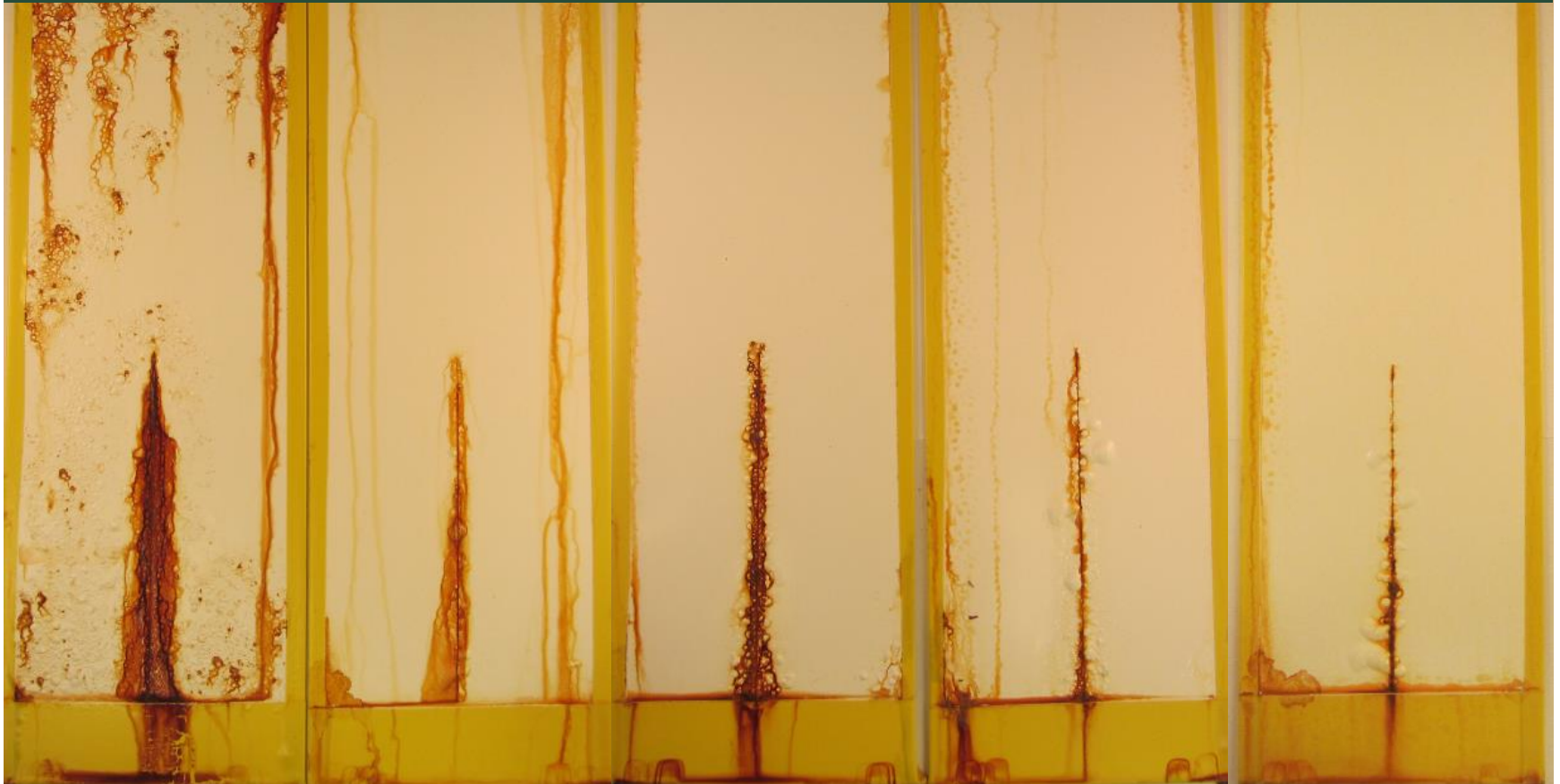
Commercial DTM

Commercial DTM

Joncryl PRO 1522

Joncryl PRO 1524

Joncryl 2981



Joncryl 2981 Chemical Testing

One hour covered spot test rating:

- 5 = no effect
- 0 = complete destruction of coating

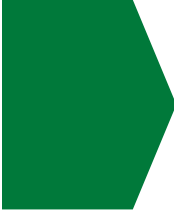
Self-crosslinking provides improved chemical resistance

	Joncryl PRO 1524	Joncryl 2981
Brake Fluid	2	2
Gasoline	3	4
10% NaOH	5	5
70% IPA	3	4
Formula 409	3	5
Clorox Bleach	5	5
50% Ethanol	4	5
Windex	4	5
DI Water	5	5



*Formula 409 and Clorox Bleach are registered trademarks of The Clorox Company.
Windex is a registered trademark of SC Johnson & Son, Inc.*

Product Benefits Summary



Coating manufacturers can differentiate their coating based on strong resistance to change when exposed to various chemicals and weathering; coupled with a combination of other benefits.

- Superior warmth of wood
- Excellent chemical resistance, weathering, and adhesion on wood, metal and vinyl composite tile
- Good hardness development, salt spray and block resistance
- Superior durability
- Can be used as primer vehicle for corrosion-resistant coatings

- Clear coat exhibits no “greening” on cherry
- Multipurpose, end-use versatility and flexibility
- VOC latitude range: 180 g/L - 220 g/L
- Competitive pricing
- Can be used as a grind resin to improve chemical resistance properties of a DTM coating

Contact

Contact	Position	Email	Phone
James Monroe	Market Segment Manager, Furniture and Floor Coating	james.monroe@basf.com	(248)304-5400
Vince Goldman	Formulation Service Institute	vincent.j.goldman@basf.com	(248)304-5310
Chuck Jones	Technical Manager	charles.jones@basf.com	(248)948-2182
Jack Miller	Product Manager	jack.miller@basf.com	(248)948-2030

Disclaimer

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.

Acronal, Dispex, FoamStar, Hydropalat, Joncryl and Rheovis are registered trademarks of BASF Group.

© BASF Corporation, 2017



We create chemistry