Dr Miller's File Room

IV B3i2 Data

for Exterior Stains

PLAINTIFF'S EXHIBIT
UC-734

A23506

UNION CARBIDE COATINGS MATERIALS

UCAR LATEX 368 A VINYL-ACRYLIC
DESIGNED FOR LATEX STAINS

APPLICATION INFORMATION

UCAR LATEX 368
A Vinyl-Acrylic Designed for Latex Stains

UCAR Latex 368 is a high molecular weight vinyl-acrylic polymer which allows formulation of latex stains characterized by toughness and durability. As a vehicle designed for use in exterior stains, UCAR Latex 368 contributes film toughness, elongation, and a higher degree of exterior durability than normally exhibited by vinyl-acrylic latexes. UCAR Latex 368 has consistently demonstrated the ability to outperform other vinyl-acrylic and all-acrylic latexes when incorporated in both solid color and semi-transparent stains. In addition to overall durability UCAR Latex 368 contributes a high level of water resistance, excellent tint retention, and superior resistance to dirt collection. Another unique property of UCAR Latex 368 is its ability to provide the rheology necessary for leveling and lap-in required to formulate quality latex stains.

TYPICAL PROPERTIES OF UCAR LATEX 368

Total Solids	= 54 to 56% by wt.
pH	= 4.0 to 5.0
Residual Monomer as Vinyl Acetate	= 0.5% by wt., max.
Latex Viscosity at 20°C. (Brookfield #3 Spindle at 60 rpm)	= 250 to 600 cps.
Average Particle Size	= 0.7 microns
Weight per Gallon at 20°C.	
Latex	= 9.05 lb.
Solids	= 9.68 lb.
Mechanical Stability	= Excellent

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This information is not to be taken as a warranty or representation for which we assume legal responsibility nor as permission or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification.

SUGGESTED FORMULATIONS

Latex stains, whether semi-transparent or solid colors, are penetrating finishes for use on exterior (or interior) rough-sawn or smooth siding, shakes, shingles, plywood, fences, etc. The vehicle actually penetrates the wood to preserve it, maintaining a natural look for years. Solid color stains are similar to regular paints since they are opaque and obscure the wood grain. Solid color stains can be formulated in a wide range of colors, just as regular house paint, but generally they are available in deep tones or medium shades. The usual pigments used are the iron oxides, natural earth oxides, and chromium oxides.

FORMULATION SUGGESTION 16-51-H SOLID COLOR DARK BROWN STAIN

Ingredients	Pounds	Gallons
Water	250.0	30.01
CELLOSIZE QP-52,000	3.0	.26
Tamol 850	4.5	.52
TERGITOL NPX	3.0	.34
KTPP	1.0	.05
Bālab 746	1.0	.14
Ethylene Glycol	10.0	1.08
Dowicil S-13	5.0	.32
Titanium Dioxide (1)	25.0	.73
Minex-4	45.0	2.07
Zinc Oxide (2)	45.0	.97
Celite 281	25.0	1.30
Black Iron Oxide (3)	28.0	.68
Burnt Umber (4)	44.0	1.52
Butyl CARBITOL	15.0	1.89
Water	146.0	17.53
UCAR Latex 368 (55% Solids)	351.0	38.78
Bālab 746	2.0	.27
TOTAL	1004.5	98.46

(1) RA-NC, OR 640-A, or R-966
(2) XX-503, or AZO-33
(3) Williams BK 5099
(4) Davis 616-J

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Physical Properties

Total Solids = 41.53
PVC = 26.69
Viscosity = 64 KU
pH = 7.4

The semi-transparent stain, Formulation 14-84-A, in the modern "see through" vogue allows the natural beauty of the wood grain to show through. It is basically a clear coating with just enough coloring pigment added to give the desired natural shade. A wide range of colors and shades is possible. It is important to note that the finished color of Formulation 14-84-A will vary slightly depending on the type of wood being coated, its original hue and its texture.

FORMULATION SUGGESTION 14-84-A SEMI-TRANSPARENT STAIN BASE

Ingredients	Pounds	Gallons
Water	200	24.00
CELLOSIZE QP-52,000	4	.34
AMP	1	.13
TERGITOL NPX	3	.34
Foamaster G	1	.13
Ethylene Glycol	20	2.16
Dowicil 100	1	.15
Zinc Oxide (XX-503)	15	.32
Gold Bond R	50	2.27
Asbestos (SG-210)	10	.43
PVO-44-O	50	6.17
Foamaster G	1	.13
UCAR Latex 368	250	27.75
Water	298	35.77
TOTAL	904	100.09

Physical Properties

Total Solids = 28.10
Viscosity = 68 KU
PVC = 14.13
pH = 7.8

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STORAGE AND HANDLING

Storage and handling procedures should follow the good practices recognized for latexes and latex paints. Storage tanks should be corrosion resistant. Stainless steel, fiberglass, and glass- or epoxy-lined steel are suitable. Piping and circulating pumps should also be similarly protected. The latex is stable to prolonged heating at 120°F. and can usually withstand freezing nevertheless, such treatment tends to reduce the stability of any latex. Temperature extremes should be avoided.

TOXICOLOGICAL PROPERTIES

UCAR Latex 368 has not been fully tested for toxicity in animals, but on the basis of similarity in structure and chemical composition to latexes that have been tested, it is not expected to be hazardous by swallowing, skin absorption, or breathing of vapors.

PRECAUTIONARY LABELING

Store above 40°F. Do not freeze. FOR INDUSTRY USE ONLY

A2351C

7/26/72

JENNAT CORPORATION

A SUBSIDIARY OF UNION CARBIDE CORPORATION

Quality Emulsion Polymers

10206 HAWTHORNE BOULEVARD, TORRANCE, CALIFORNIA 90503

213 772-6435

To: Mr. J. C. Fryman
LADSO

Date: May 5, 1972

cc: Mr. F. G. Bertics
Mr. G. W. Buttrick
Mr. W. J. Fitzpatrick
Mr. J. C. Flanders
Dr. K. L. Hoy
Mr. R. D. James
Dr. D. H. Klipstein
Dr. A. L. Mantz
Mr. C. E. Metten
Dr. W. P. Miller
Mr. P. C. Payne
Mr. M. O. Robinson
Dr. R. Stickle
Mr. W. M. Sullivan

Subject: Latex Stains

Dear Jim:

Attached is a report describing the latest results of our latex stain program including the "EMMAQUA" exposure results and giving our current formulations.

I will be glad to schedule a presentation to the field sales force during the month of June. I hope you find the information useful in your sales development efforts.

Best regards,

Dick

Richard W. Lasher

jk

Attachment

A23511

LATEX STAIN TECHNOLOGY

A. INTRODUCTION

Latex stains are divided into two categories, opaque and semi-transparent. The opaque stains hide the substrate and are used primarily on rough cut exterior wood siding or to cover the grain on low cost plywood siding. Semi-transparent stains are utilized to enhance the appearance of the grain and are generally applied to the better grades of wood. The stains are applied by brush or roller and either one or two coats may be used. The opaque type enjoy the largest share of the market since they allow builders to use lower cost decorative wood siding. The advantage of latex stains compared to their oil counterparts are:

1. Longer service life because of their better ultraviolet resistance.
2. Dries within 1/2 to 4 hours rather than several days. Therefore, two costs can be applied in one day.
3. Conforms to recent changes in air pollution requirements for Los Angeles County.
4. Water reducible providing for easy clean up.
5. Better package stability, severe settling occurs in the oil stains.
6. The economics (RMC) of the latex system, when compared at equal solids and PVC, are better.

The only disadvantage of latex stains is a lack of open-time which causes lap masks. Consequently, the proper amount of flatting agent must be used to prevent a high sheen.

Opaque latex stains employ two types of formulations. Table 1 shows the physical properties associated with each type. The most common formulation, which

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Semi-Transparent Stain Base
14-84-A

Ingredients	Pounds	Gallons
Water	200	24.00
CELLOSIZE QP-52,000	4	0.34
AMP	1	0.13
TERGITOL NPX	3	0.34
Foamaster G	1	0.13
Ethylene Glycol	20	2.16
Dowicil 100	1	0.15
ZnO (XX-503)	15	0.32
Gold Bond R	50	2.27
Asbestos (SG-210)	10	0.43
PVO 44-0	50	6.17
Foamaster G	1	0.13
UCAR-368	250	27.75
Water	298	35.77
	904	100.09

Physical Properties

Total Solids = 28.10
Viscosity = 68 KU
PVC = 14.13
pH = 7.8
Approximate Cost = $0.5233/Gallon

A23513
5/4/72

UNION CARBIDE INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS • [illegible] CHARLESTON, WEST VIRGINIA 25303

To (Name)
Division
Location

Mr. R. W. Lasher
Jennat Corporation
Torrance, Calif. 90503

August 1, 1972

Research and Development

Copy to

Mr. F. G. Bertics, NYO
Mr. J. C. Flanders, NYO
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Dr. A. L. Mantz, 511
Dr. C. W. McGary, 511
Dr. W. P. Miller, 511
Mr. P. C. Payne, Jennat-Alsip

UCAR 368 Latex Stains - Proposed TI Bulletin

Dear Dick:

I have reviewed the proposed TI bulletin for UCAR 368 in latex stains. The only comments that I have are on the semi-transparent stain base shown on page 3 of the bulletin.

Both Glidden and NL Industries (East Coast) have objected to the use of asbestos because of health hazards. Is there anothers extender that you have evaluated that can be substitued for asbestos? Asbestos contributes to flatting, but so does Celite 281, Cab-O-Sil M-5, Zeothix 95, Santocels, and Syloids. All of these extenders are silica types and should be more exceptable than asbestos. We are in the process of evaluating most of these extenders in semi-transparent stains.

NL Industries (East Coast) also objected to PVO-44-O and preferred an alkyd resin. However, PVO-44-O may be exceptable to West Coast paint companies. Alkyd modification of UCAR 368 in stains is under investigation at South Charleston.

Only 15 pounds of zinc oxide will not be enough to protect the stain from attack by mildew. You may want to include additional protection by adding 5 to 10 pounds of Dowicil S-13 or Nopcocide N-96.

Good luck on your promotion of UCAR 368 latex stains on the West Coast.

Very truly yours,

George W. Buttrick

GWB:pw

A23514

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TRADE PAINT INTERMEDIATES

PROJECT PROFILE

LATEX STAINS

Objective: To develop technology necessary to gain _____% of the exterior stain market.

Situation: Factory shipments of stains were believed to be 4.6 million gallons in 1970 and are expected to increase to 5.7 million gallons in 1975. Latex usage in this application was about 7.5 million dry pounds in 1971. On the West Coast, Rhoplex AC-34 and AC-35 type acrylics are used by Kelly-Moore, Paint and Coatings, Universal Paint, and NL Industries. It is estimated that 3-5 million pounds per year of latex are used in stains on the West Coast. The majors such as Glidden and Sherwin-Williams have recently formulated a line of exterior stains based on Rhoplex AC-388. Glidden has expressed interest in a lower cost vehicle for exterior stains.

The UCC latex stain program was initiated at the West Coast Jennat plant, primarily because of the popularity of stains in that geographical area. An aggressive, accelerated testing program by Jennat West has shown that a vinyl acrylic such as UCAR 365 out performas acrylics such as Rhoplex AC-34 and AC-35 in this application. This has led to the development of a 4MM pound potential for UCAR 365. Kelly-Moore recently started purchasing UCAR 365 for stains under the designation UCAR 368.

Approach: The utility of UCAR 368 and West Coast stain formulations for other geographical areas will be determined. All UCC paint latexes including VACA will be evaluated in stain applications together with commercial stains to determine the best UCC latex candidate(s). Latex stain formulations will be introduced to selected customers. Every effort should be made to establish joint testing programs.

Program:

	Assigned to	Target
1. Determine stain technology base within UCC	GWB	May, 1972
2. Define stain requirements		Sept., 1972
Data from West Coast	GWB	
Calls on manufacturers of stains	DHK, GWB	
Evaluation of commercial stains	GWB	
3. Determine best UCC latex candidate(s) for stains	GWB	Oct., 1972

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Union Carbide trial exhibit UC-734: Union Carbide / Jennat UCAR Latex 368 Exterior Stain File: Application Bulleti... Published by AsbestosClaims.Law
ACL Doc 15966 · Page 10 of 11 asbestosclaims.law/library/15966/10

		Assigned to	Target
4.	Develop stain formulations for UCC latexes	GWB	Dec., 1972
5.	Put together stain kit for sales demonstrations	GWB	Jan., 1973
6.	Select customers for presentations	All	Feb., 1973
7.	Begin sales development program	FGB	March, 1973

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