

WA-370

1. INTRODUCTION

Water-based Acrylic resin

2. SPECIAL FEATURES

WA-370 is an environment friendly water-based acrylic resin with excellent dispersity in water, it have good adhesion, fullness, and high gloss, hardness, also good in impact, solvent resistance.

3. APPLICATION

Curing with Melamine for glass baking paint, metal baking paint, curing with isocyanate for low temp. plastic paint.

4. CHARACTERISTICS OF THE RESIN

ITEM	UNITE	RESULT
Appearance		Light color in transparent
Color		Max. 2
Solid Contain	%	65±1
Viscosity	mPa·s in 25 °C	10,000~30,000
Tg	°C	68 (1)
pH value		3-5
Acid value	mgKOH/g	≤ 50 (2)
OH value	mgKOH/g	50
Co-solvent		BCS

(1) DSC(METTLER) (2) ISO 3682

5. PACKAGE

50 or 200 Kg/ drum

6. STORAGABILITY

Stored in a cool and dry place with adequate ventilation

7. REFERENCE FORMULATION

WA-370 Water-base glass baking paint Ref. Formulation						
Stage	ITEM	Ratio	Name	Supplier	Note	
Mix and Stirr	1	Acrylic resin	30	WA-370-65%	Chan Sieh	
	2	Melamine	8.1	Cymel 325	Allnex	
	3	Wetting	0.3	TEGO270	TEGO	
	4	Leveling	0.5	EFKA3772	BASF	
	5	Defoamer	0.2	BYK-028	BYK	
	6	Defoaming	0.2	104E	Air Product	
	7	Silane	2	KBM-403		
	8	TiO ₂ (70%)	45	TiO ₂		
	9	Water	12	Deionized water		depends viscosity
	10	Neutralizer	1.7	DMEA		
	11		100			

Ratio

1. WA-370-65% / 325 = 75 / 25 (in Solid)
2. P/B = 1.2 / 1 (Pigment/Base)
3. pH = 7.5 ~ 8.5 (DMEA)

WA-370 Test Result of Water-base glass baking paint		
ITEM	Result	Note
Film thickness	20±2µm	
Gloss(60°)	> 90 °	ASTM D-523
Hardness of coating	2H~3H	GB 6739
Impact test (1/5in-1kg-50cm)	5B	
Cross cut Test	> 50 times	MEK
Alcohol resistance Test	≥ 2hr	95% Ethanol
Acid resistance Test	≥ 48hr	HCl 5%
Alkali resistance Test	≥ 24hr	NaOH 2%
Water resistance Test	≥ 48hr	

Coating condition : Viscosity=22±2s (NK-2 Cup)

Curing condition : 150~180°C *20~30min

Color Paste		Paint	
Item	Ratio %	Item	Ratio %
Deionized water	22.8	Color Paste	40
EFKA-4585	7	WA-370	45
BYK-028	0.2	Cymel 303	5.6
CR-80	70	TEGO-270	0.4
		EFKA-3772	0.3
		AMP-95	0.2
		Deionized water	

Coating : by Spraying

Curing : 140~160°C × 20~30 mins ◦

Basic Properties

Items	Condition	Result
Film thickness		25~30µm
Gloss	Gloss meter	85-95% surface smooth
Hardness	UNI Pencil	1H~2H
Impact	1/2 × 1Kg × cm	Pass
MEK resistance		≥ 50
Water resistance	Deionized water 40°C × 240 hr	Pass, no change, adhesion 100%

Accelerated Weathering Testing

(Cycles of 4 hours of UV-313 light at 60°C and then 4 hours at 50°C , spray water 4 mins)

Hour	0hr	48hr	72hr	96hr	120hr	144hr	168hr	192hr	216hr	240hr
Gloss	90%	95%	86%	89%	84%	83%	81%	77%	74%	71%

WA-370 Water-base 2KPU Varnish Ref. Formulation					
Stage	ITEM	Ratio	Name	Supplier	Note
Mix and Stirr	1	Acrylic resin	80.07	WA-370-50%	產協 ChanSieh
	2	Wetting	0.48	TEGO270	TEGO
	3	Leveling	0.63	EFKA3772	BASF
	4	Defoaming	0.32	BYK-028	BYK
	5	Water	15.01	H2O	
	6	Cosolvent	3.28	BCS	
	7	Defoaming	0.21	104E	Air Product
		100.0			

Coating : by Spraying, rolling

Curing : 70~80°C × 30~40 mins ◦

Basic Properties

Items	Condition	Result
Film thickness		25~30μm
Gloss	Gloss meter	85-95% surface smooth
Hardness	UNI Pencil	1H~2H
Impact	1/2 × 1Kg × cm	Pass
MEK resistance		≥ 50
Water resistance	Deionized water 40°C ×240 hr	Pass, no change, adhesion 100%