

As shown in Table 1, using the right SPSMA Resin can give you the balance of properties you need for your particular application. For example, use SPSMA 10 for the highest gloss and best thermal resistance, or use SPSMA 20EX or SPSMA 20 for high gloss, excellent thermal resistance and the best water resistance.

**Table: 1 – Effect of Hard Resin Addition to SPCRYL EO Emulsion:**

Formulation	SPSMA 10	SPSMA 20	SPSMA 20EX	Acrylic Emulsion
SPCRYL EO	49	49	49	49
Hard Resin Solution	23	44	44	28
Dowanol DPM	1	1	1	1
IPA	1	1	1	1
PE Wax	5	5	5	5
Water	21			16

  

OPV solid content %	33	32.5	32.5	34.5
Viscosity ZC # 2	25	33	33	25
Gloss – 3NT-3	66	61	64	70
Water resistance (2hrs)	3	5	5	5
Scuff resistance	4.5	4	4	3
Heat resistance (190°C)	4	4.5	4	2
Hot Scuff (150°C)	4.5	4.5	4.5	3

### Conclusion:

SPSMA Polymers can enhance properties of styrene-acrylate emulsion overprint varnishes when they are added as a post addition hard resin. In particular, SPSMA Polymers are of proven benefit in preparing overprint varnishes where high thermal properties are required.

### Other Applications:

SPSMA Polymers can also be used in other applications as under:

- 1) Carpet & Rug Shampoos
- 2) Leather Retanning
- 3) Paper Surface Sizing

For further details, please contact the product manager for the same.

# PRODUCT PORTFOLIO

## SPSMA Resins:

Product	S:MA Ratio	M <sub>w</sub>	M <sub>n</sub>	Viscosity @ 200°C (Poise)	Acid Value	Tg (°C)
SPSMA 10	1:1	5,000	2,100	60,000	465-495	155
SPSMA 20	2:1	7,500	2,700	6,000	335-375	135
SPSMA 30	3:1	9,500	3,050	3,000	275-285	125
SPSMA 40	4:1	11,000	3,600	750	195-235	115
SPSMA 60	6:1	11,500	5,500	70	141-171	106
SPSMA 80	8:1	14,000	7,500	100	105-135	104

## SPSMA Esters:

Product	M <sub>w</sub>	M <sub>n</sub>	Viscosity @ 200°C (Poise)	Acid Value	Tg (°C)
SPSMA 10 E	7,000	2,900	300	165-205	60
SPSMA 10 EX	7,000	2,900	10,000	255-285	125
SPSMA 20 E	9,000	3,100	1,000	200-240	110
SPSMA 30 E	10,500	4,100	50	95-120	75
SPSMA 80 E	17,000	5,500	15	110-120	45

## SPSMA Resins & Ester Aqueous Base Solutions:

ResinGrade	Solid %	pH	Viscosity(cps at 30°C)	Gardener Color
SPSMA 10 H	35.5 – 39.5	9.0 ± 0.5	200 to 1,200	<2
SPSMA 10 EH	31.0 – 36.5	9.0 ± 0.5	5,000 to 15,000	<5
SPSMA 20 H	20.0 – 24.0	9.0 ± 0.5	As measured	<2
SPSMA 20 EH	18.5 – 20.0	9.0 ± 0.5	As measured	<3
SPSMA 10 EXH	24.0 – 26.0	9.0 ± 0.5	As measured	<3
SPSMA 10 HNa	39.0 – 41.0	9.5 ± 1.5	<500	As measured
SPSMA 20 HK	29.0 – 31.0	9.5 ± 1.5	<5,000	As measured
SPSMA 30 HNa	19.0 – 21.0	9.5 ± 1.5	<5,00	As measured

