

## Paraloid™ SureCel™: A Perfect Ten

- cuts material usage by a stunning 10 to 15 percent while producing the same amount of board feet
- lower density with the same high performance
- even expansion across wide sheet dies
- superior cell uniformity across wide sheet dies
- reduces cellular voids, higher gas containment level
- enables thicker gauge sheets up to 1.5 inches thick
- processes at a lower temperature, reducing decomposition and yellowing risks
- exhibits excellent viscosity and easily substitutes into existing formulations
- simple and straightforward substitution for conventional technology
- expected to become the new industry standard

## Lower Gloss, Better Paint Adhesion

Paraloid™ SureCel™ yields a lower gloss finish to free foam sheet than ever before. This matte finish lends a more wood-like texture and another major benefit to the many end-users electing to paint cellular PVC trim: better paint adhesion! Drawing on its leadership in architectural coatings, Rohm and Haas increased the surface area and mechanical interlocking capabilities to enhance paint adhesion over previous cellular PVC formulations.

### Gloss of Free Foam Sheet

Paraloid™	60 ° Gloss	85 ° Gloss
K445	18	32
SureCel™	6	12

### \*Latex Paint Adhesion

Paraloid™	One Day Dry Testing	Two Day Dry Testing
K445	3 - Easy to Remove	5 - Slightly Difficult to Remove
SureCel™	7 - Moderately Difficult to remove	8 - Difficult to Remove

Paint = Acrylic latex primer from Masterchem Industries (Kilz Total One Primer)

Adhesion was tested by a knife peel test in which an X is cut into the paint through to the foam board and a knife is used to peel back the paint. Adhesion of paint is generally lower at early dry times and this is seen in the table.

## Simple Substitution, Easy Processing

Manufacturers adopting Paraloid™ SureCel™ will find that the new technology is a straightforward substitution for conventional products. While extruder speed and cooling roll gaps may change, lubrication, die pressure, amp load and melt pressure can remain as set. The product's excellent viscosity enables it to flow freely through most machinery.

Manufacturers may choose to adopt one new setting that adds flexibility: a lower processing temperature. "The formulation of Paraloid™ SureCel™ allows cellular PVC processing at significantly lower melt temperatures than other additive choices," adds Rob Decker, field technical service manager Rohm and Haas. "The lower temperature reduces decomposition risk and yellowing potential."

## Transforming the Industry

Paraloid™ SureCel™ isn't just a little bit better than other technologies. "It's a whole new platform," continues John Channon, North American director of marketing for Rohm and Haas Packaging and Building Materials, "that customers are evaluating for its many diverse advantages." It offers production options never before possible, cuts material costs, betters competitive position, expands market penetration and delivers exactly what customers, retailers and installers want. Available right now to forward-thinking manufacturers, it's the next step to keeping pace with a growing market.

## Paraloid™ SureCel™ Foam Cell Stabilizer

# Revolutionizing Cellular PVC Trim Board Manufacture

*Sensible, attractive cellular PVC trim is gaining ground rapidly. The versatile material complements dwellings at all price points from unadorned soffits that finish tract housing to elaborate flourishes gracing high-end designer homes. Retailers, building professionals and consumers increasingly seek low-maintenance, extremely durable cellular PVC trim board. Strategy consulting firm Principia Partners estimates that cellular PVC trim board has achieved >10 percent share of an estimated two billion dollar plus exterior trim market in North America and is growing market share strongly by taking share from wood in exterior applications. It all adds up to a dynamic scenario with exciting business growth opportunities for manufacturers.*

## New Foam Cell Stabilizer from the Industry Leader

As the leading cellular PVC additive supplier allied with the market since its earliest days, specialty materials company Rohm and Haas assisted as the very first trim board of this type rolled off the line. Continually investing in customer success, Rohm and Haas is today's premiere source for the very newest, most advanced cellular PVC additive technologies. Paraloid™ SureCel™ foam cell stabilizer is the company's newest introduction to the industry.

"This is a game-changing additive technology that promises to transform the cellular PVC trim market," says Clive Grannum, Rohm and Haas's vice president and general manager for Packaging and Building Materials, North America. "We believe it is a must-have innovation for cellular PVC trim board manufacturers who are encountering increasing demand for this very popular low maintenance, highly durable building material."

### Typical Physical Properties

These properties are typical but do not constitute specifications

<b>Chemical description</b>	Acrylic polymer
<b>Appearance</b>	White, free flowing powder
<b>Bulk density, g/cc</b>	0.46 to 0.48

### Formulation

Rohm and Haas Formulation for Thick Sheet Evaluations

Ingredient	phr
PVC (K59)	100
Advastab™ TM-181	2.5
Advalube™ FI020	1.0
Calcium Stearate	0.8
Paraffin Wax	0.5
Oxidized PE Wax	0.2
Paraloid™ K175	2.0
Foam Cell Stabilizer	11.0
Calcium Carbonate	5 -10
Titanium Dioxide	2.0 – 8.0
Chemical Blowing Agent	As needed

### Not Just an Improvement: An Entirely New Technology

Used in the free foam process, Paraloid™ SureCel™ isn't a new and improved product. It's a completely new technology platform that replaces the current conventional technology which manufacturers now rely on. "With this advanced product, manufacturers accomplish things that simply couldn't be done before with previous additives. You can't get this combination of benefits from any other supplier," explains Rob Martin, Rohm and Haas's marketing manager, Plastics Additives, Packaging and Building Materials.

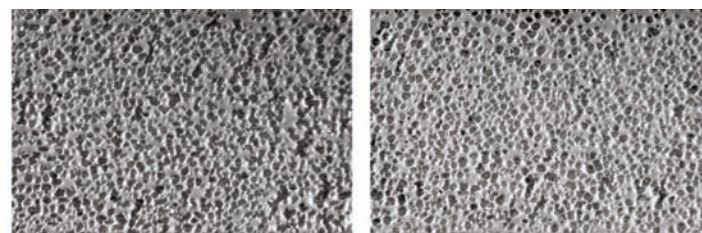
### Big Cost Savings, Same Board Feet

New Paraloid™ SureCel™ saves 10 to 15 percent on trim weight while producing exactly the same board feet of trim. For manufacturers, these numbers translate into substantial savings:

	Conventional Compound	Paraloid SureCel compound	
<b>Density of trim board g/cc</b>	0.58	0.50	0.52
<b>Pounds of compound needed for 6.6mm FBM of Trim board</b>	20mm	17.2	17.9
<b>RM cost</b>	\$13.9mm	\$12.8mm	\$13.2mm

### Lower Density, Superior Cell Uniformity, Same Top Performance

Paraloid™ SureCel™ produces a lower density cellular PVC – yet this PVC has the same excellent end product attributes that customers have come to expect from conventional cellular trim products. "The molecular design of this high efficiency acrylic foam cell stabilizer allows even expansion and superior uniformity across wide sheet dies," remarks C.S. Chou, Global R&D Director. Voids are eliminated and cell collapse minimized.

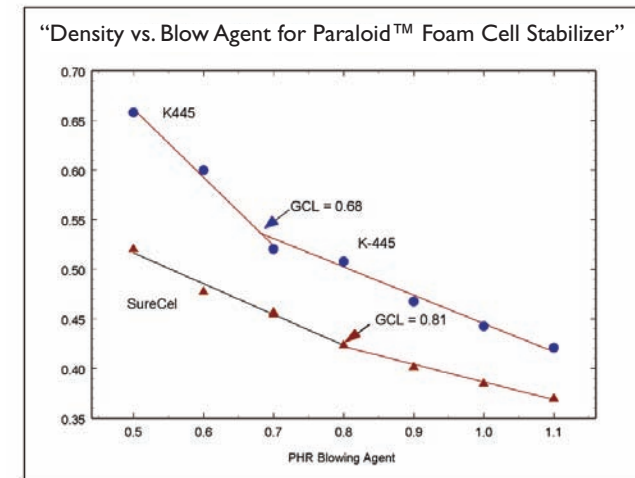


Paraloid™ K-445

Paraloid™ SureCel™

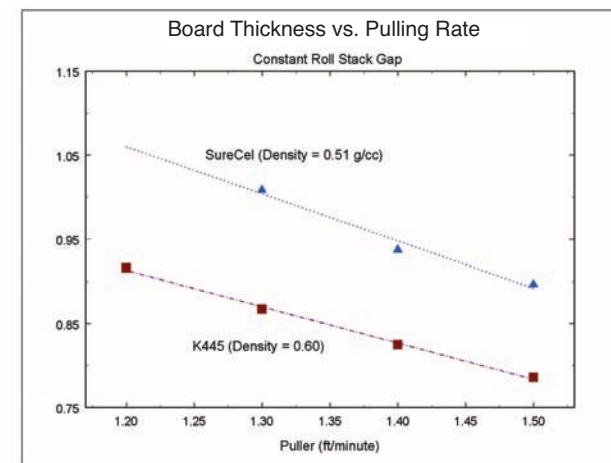
### Elimination of Voids, Higher Gas Containment Limit

Paraloid™ SureCel™ lends more resistance to void formation than conventional additive technologies achieving densities in the 0.5 g/cc range. Actual cell structure demonstrates this, as does gas containment limit (GCL) when charted as a change of slope in density versus blowing agent plots:



### Thicker Sheets, New Options

With Paraloid™ SureCel™, cellular PVC trim manufacturers can produce thicker gauge sheet putting the 1.5 inch gauge in reach for the very first time. The technology achieves this result through reduced cell collapse with increased expansion, visible when looking at thickness versus take off speed.



\*In a comparison test between K445 and SureCel, the gap in the roll stack was kept constant at one inch. The blowing agent level was fixed for both systems and the puller speed was slowed as a way of increasing thickness.

No other technology achieves a sheet of such robust gauge. This unique new ability opens exciting opportunities for millwork and other molding product applications. Millworkers, for example, may eliminate the time-consuming preparation step of laminating multiple thinner gauge sheets.



### A Runaway Market Success with Room to Grow

For exterior trim like fascia, soffits, brick mold, decorative details, window trim, door surrounds and the like, it's immediately apparent why cellular PVC is so attractive. The material mimics wood's look and weight, can be texturized if desired and exhibits exceptional consistency throughout each piece without imperfections like knots. Working with cellular PVC is much like handling wood because it's easy to drill, nail and paint – if it's not already custom colored at the factory.

Cellular PVC trim's durability is legendary and among the top reasons that builders in harsh climates like coastal areas adopted it early on. Scraping and washing are rapidly becoming obsolete with this modern material. It resists water, weather, insets, sun and mold damage. Staining, splitting and scratching are also far less likely. These attributes translate directly to far less homeowner maintenance – a big reason why outdoor trim of this type in place for five years at a shore home likely will look, with little or no care, as fresh as the day it was installed.