

2016 SHOW & CONFERENCE

ramsramspec

raw materials specialties chemicals



HOW CAN

Ultra-High
Performance
Pigments bring
Sustainability
and Competitive
Advantage

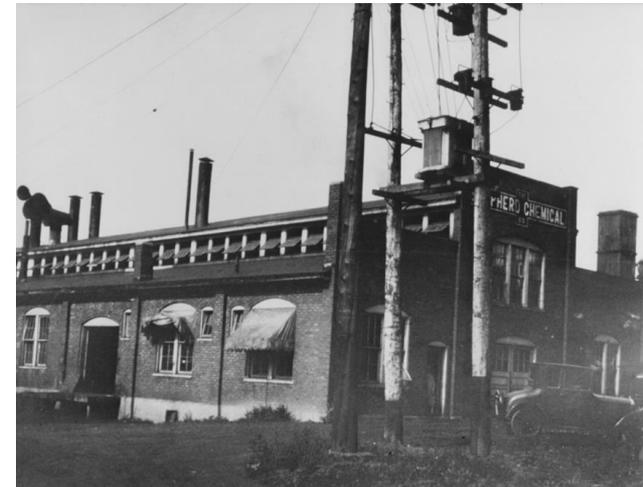
Shepherd

The Shepherd Color Company

We Brighten Lives



- Established 1916
- Color production 1930
- 4th Generation



MORE EXPERTISE



BETTER PERFORMANCE



BEST VALUE



Complex

Inorganic

Color

Pigments

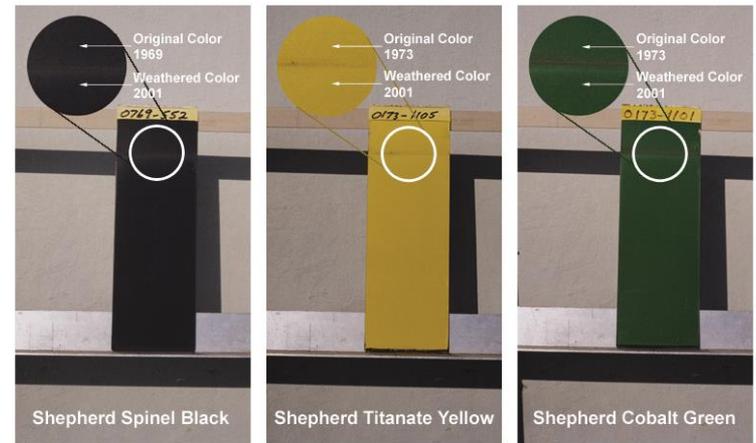






- Heat Stability
- Durability
 - UV resistance
 - chemicals
- Opacity
- Special Properties
 - functionality
 - regulatory (FDA, Reach, ...)

45 years of weathering in South Florida





Ultra High-Performance
Easily-Dispersed Color



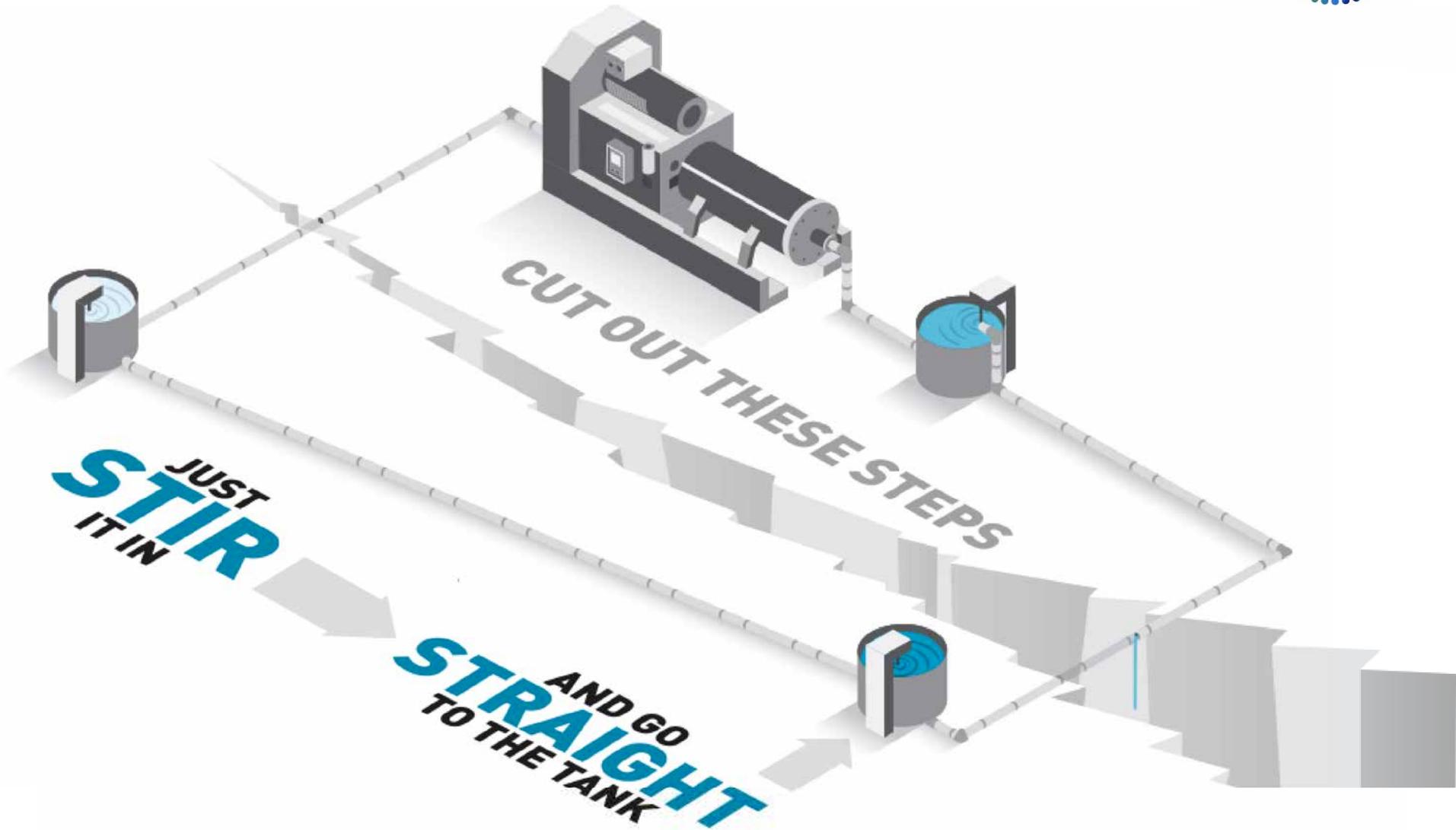
The Shepherd Color Company
We Brighten Lives

PURE CONVENIENCE





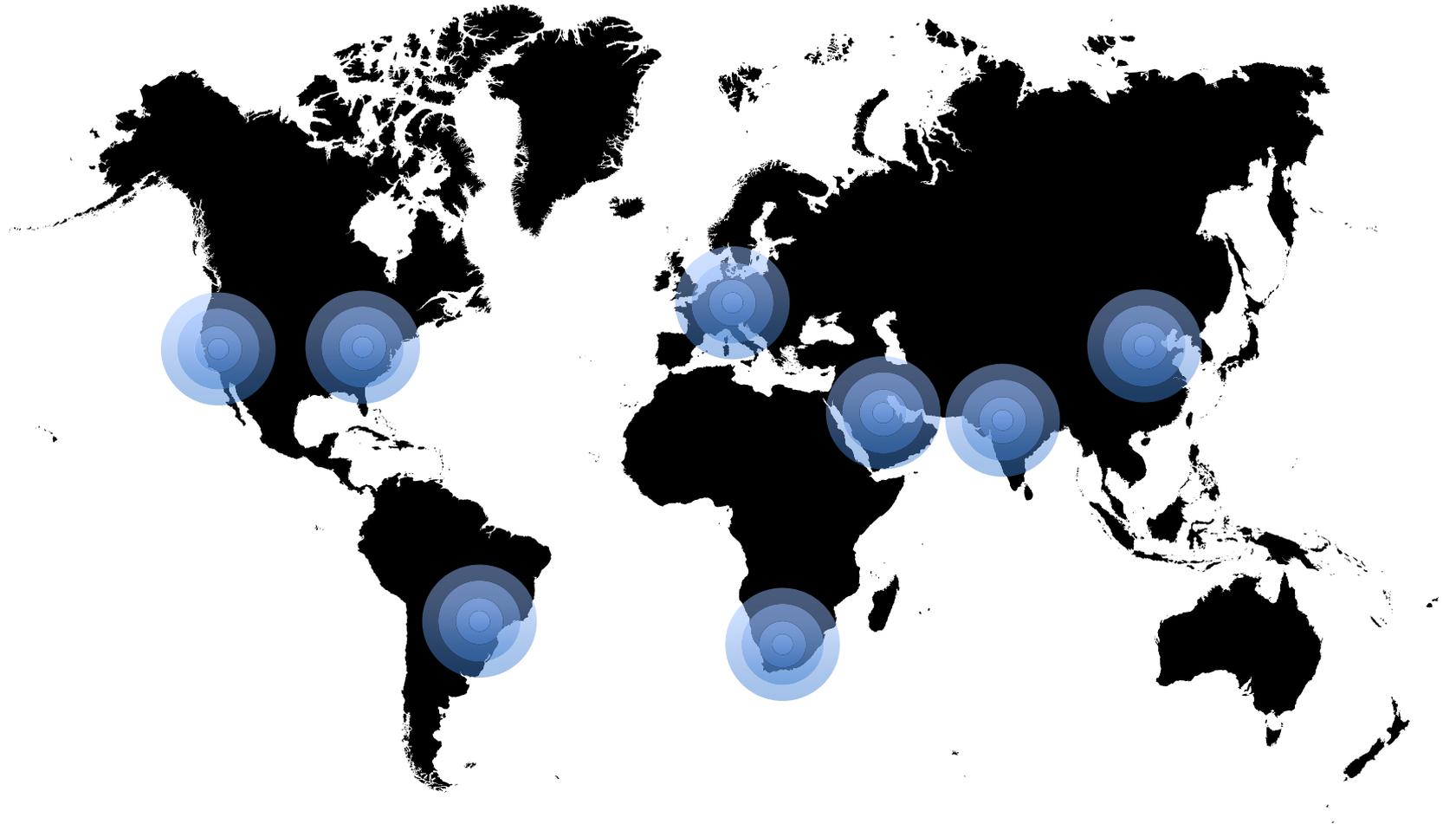
**JUST
STIR
IT IN**



LARGE OR SMALL BATCH SIZE



SAME COLOR, ANYWHERE



PURE CONSISTENCY





IMPROVE QUALITY AND CONSISTENCY

- Tight control of masstone and tint
- Consistency Total Solar Reflectance
- Improved coatings properties
- Same weatherability as standard grades

100%
PURE
COLOR



THINK OF IT LIKE THIS



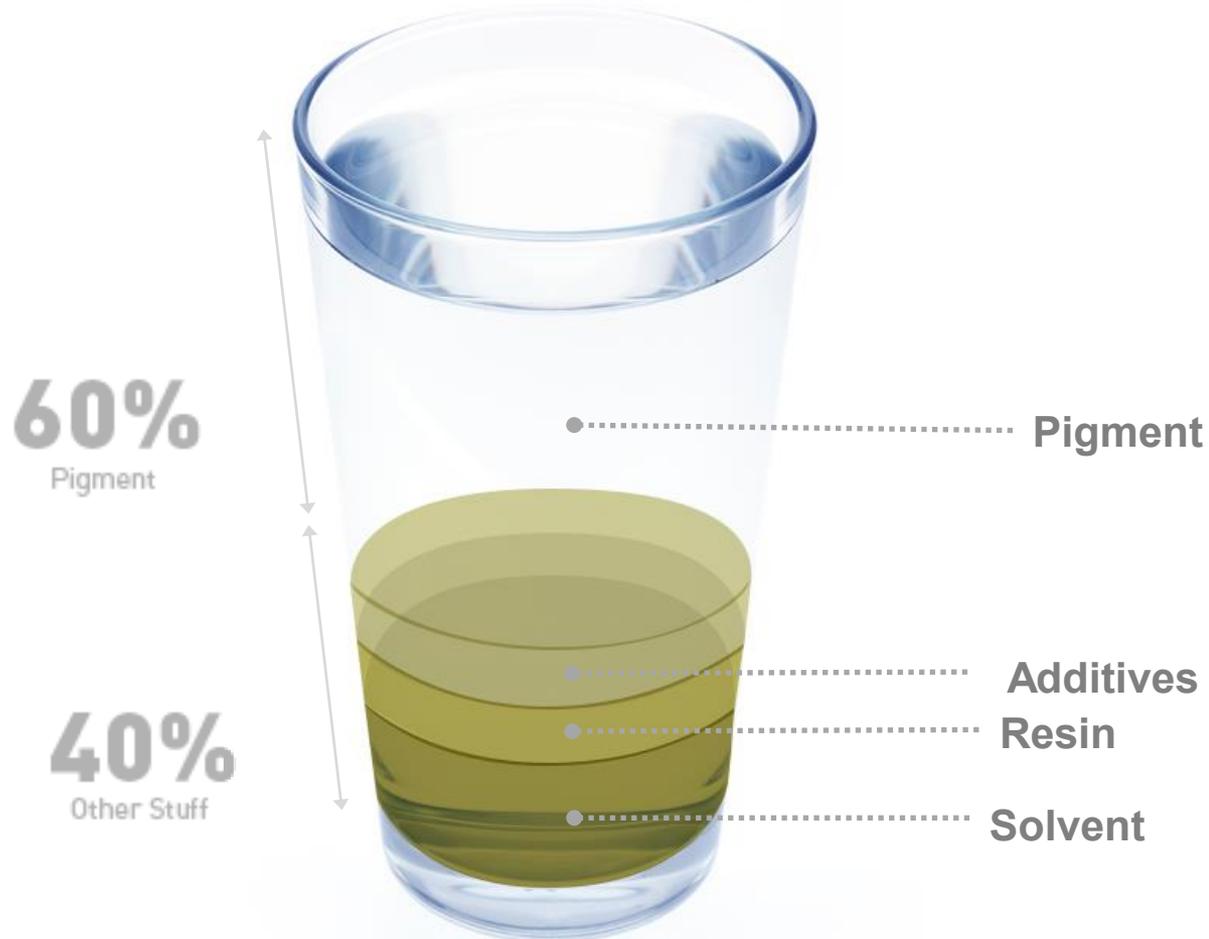
THINGS AREN'T ALWAYS WHAT THEY SEEM...



THINK OF IT LIKE THIS



THINGS AREN'T ALWAYS WHAT THEY SEEM...



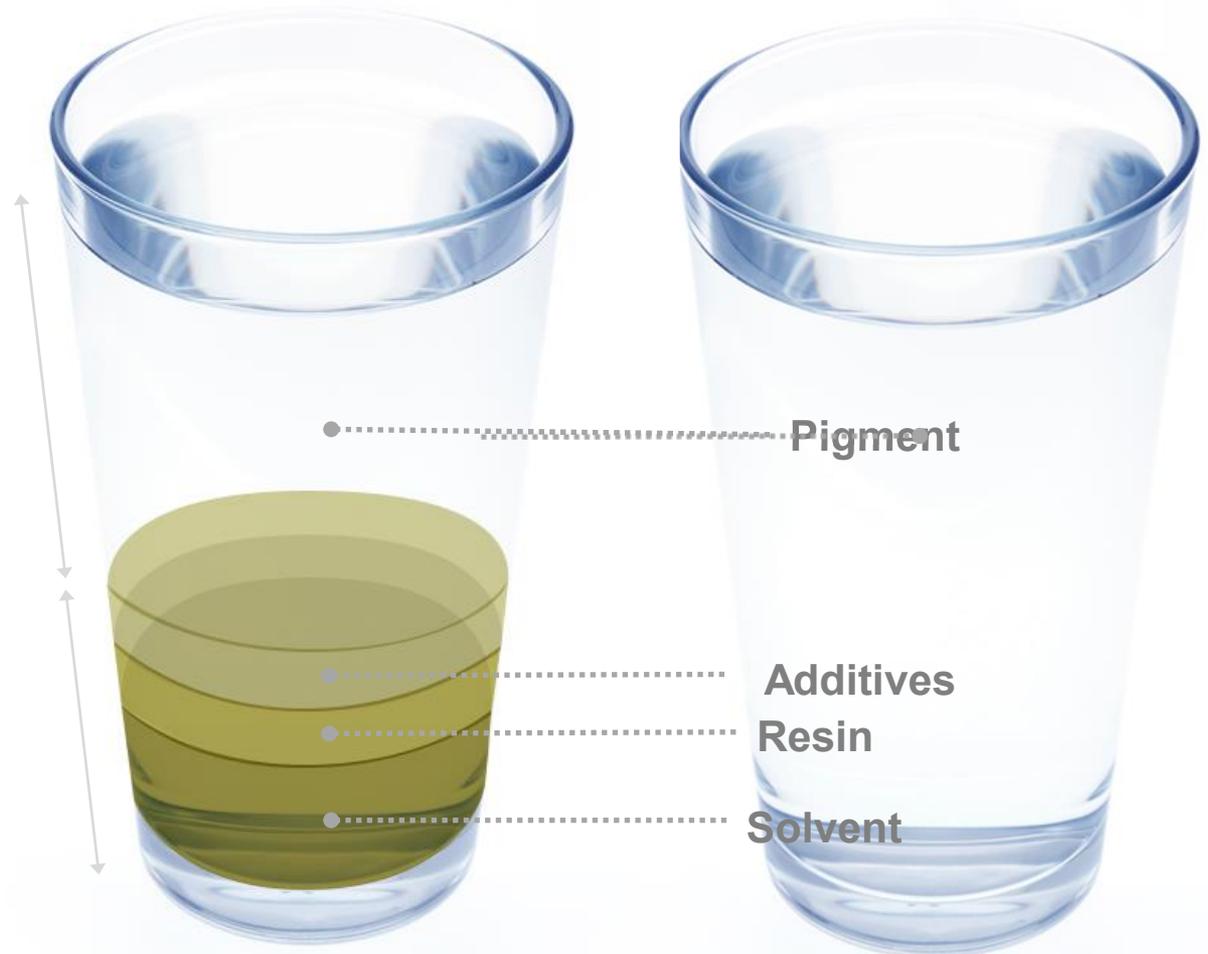


STANDARD COLORANTS

FULLY DISPERSABLE PIGMENTS

60%
Pigment

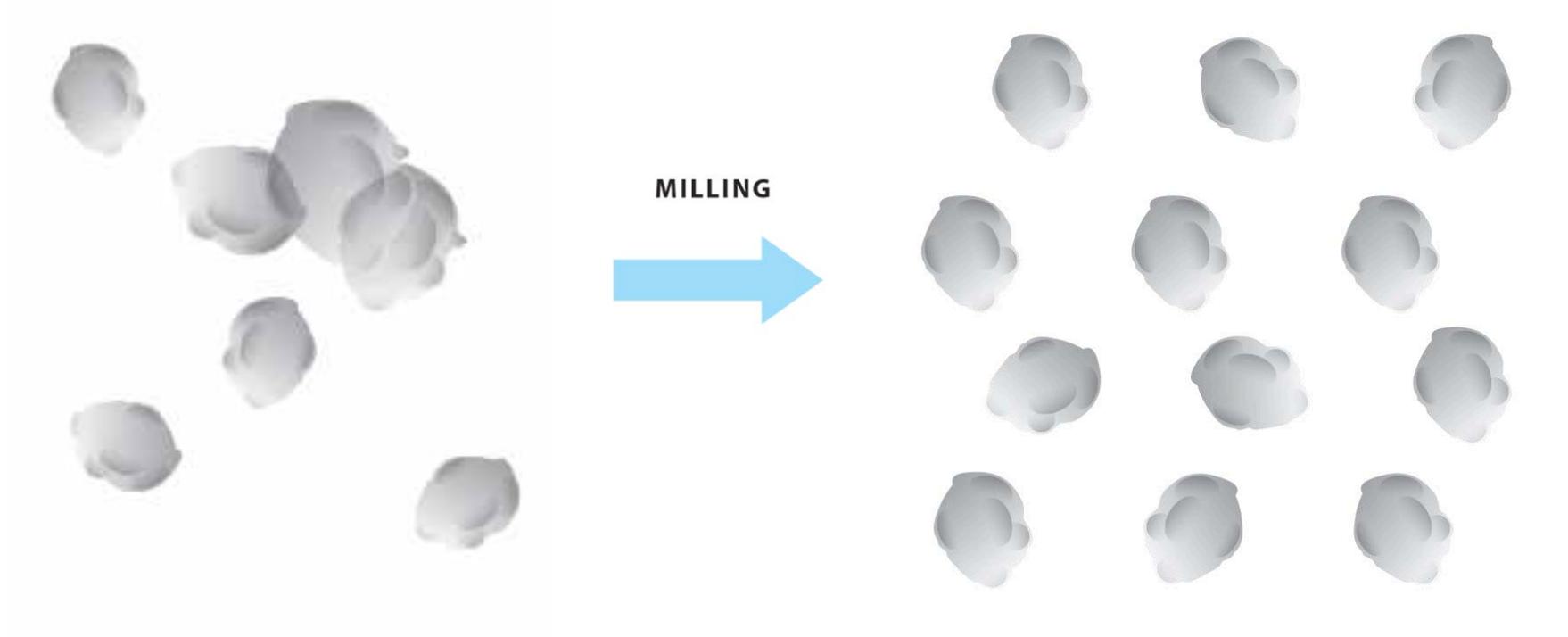
40%
Other Stuff





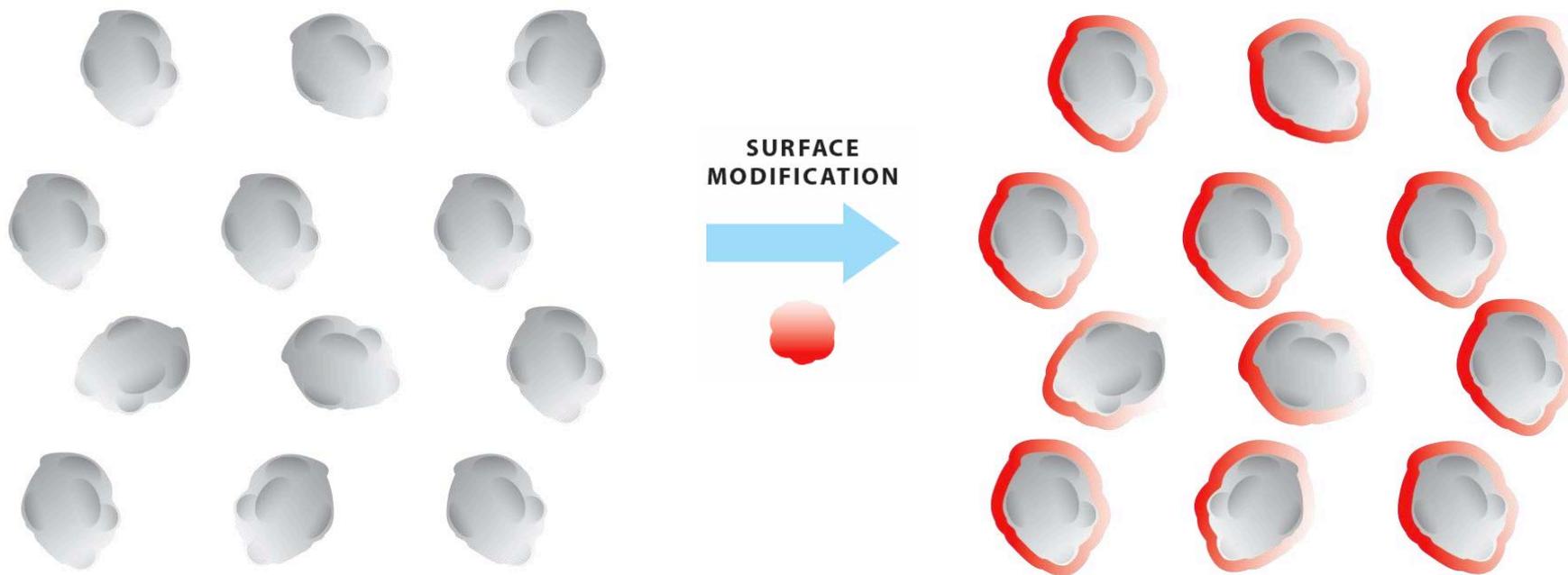
PURE?

Shepherd's micronizing technology reduces pigment particles to a uniform small size.



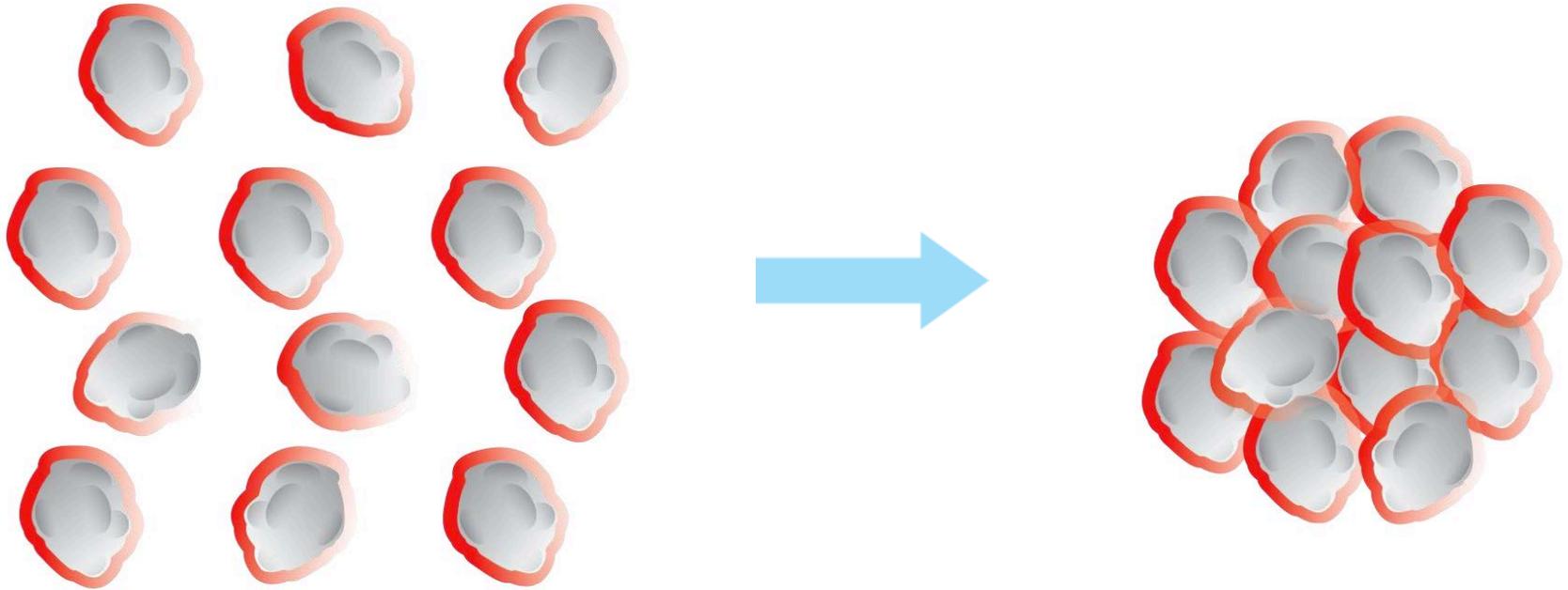
Original Particle Size

**A modification is applied
to the small particles.**



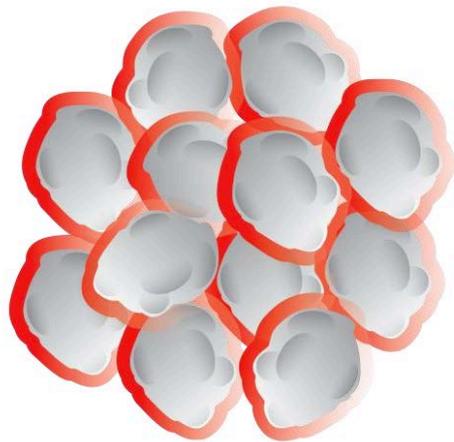
Stabilized Dispersion

Stabilized particles are formed
into a dry Stir-in pigment powder.



Dynamix Pigment

Dynamix pigments form complete dispersions using High-Speed Disperser only – no milling is required.

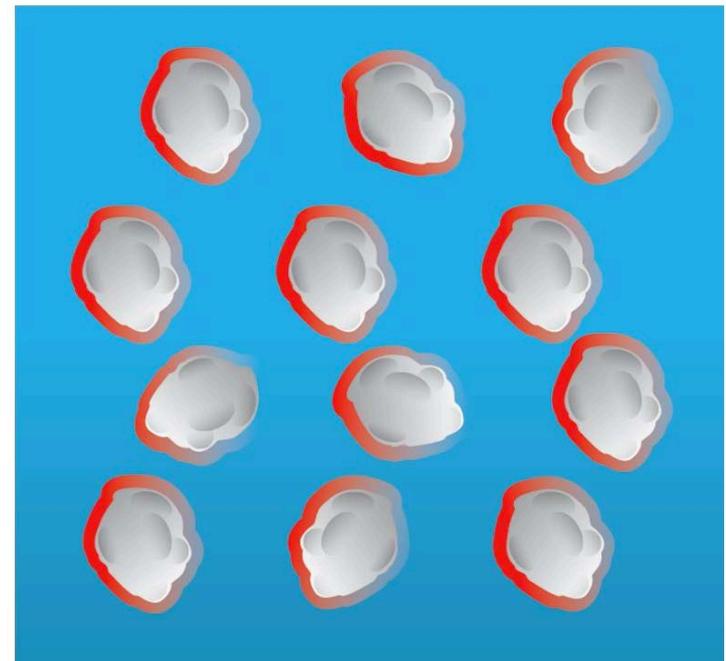


Dynamix Pigment

HIGH SPEED
DISPERSER

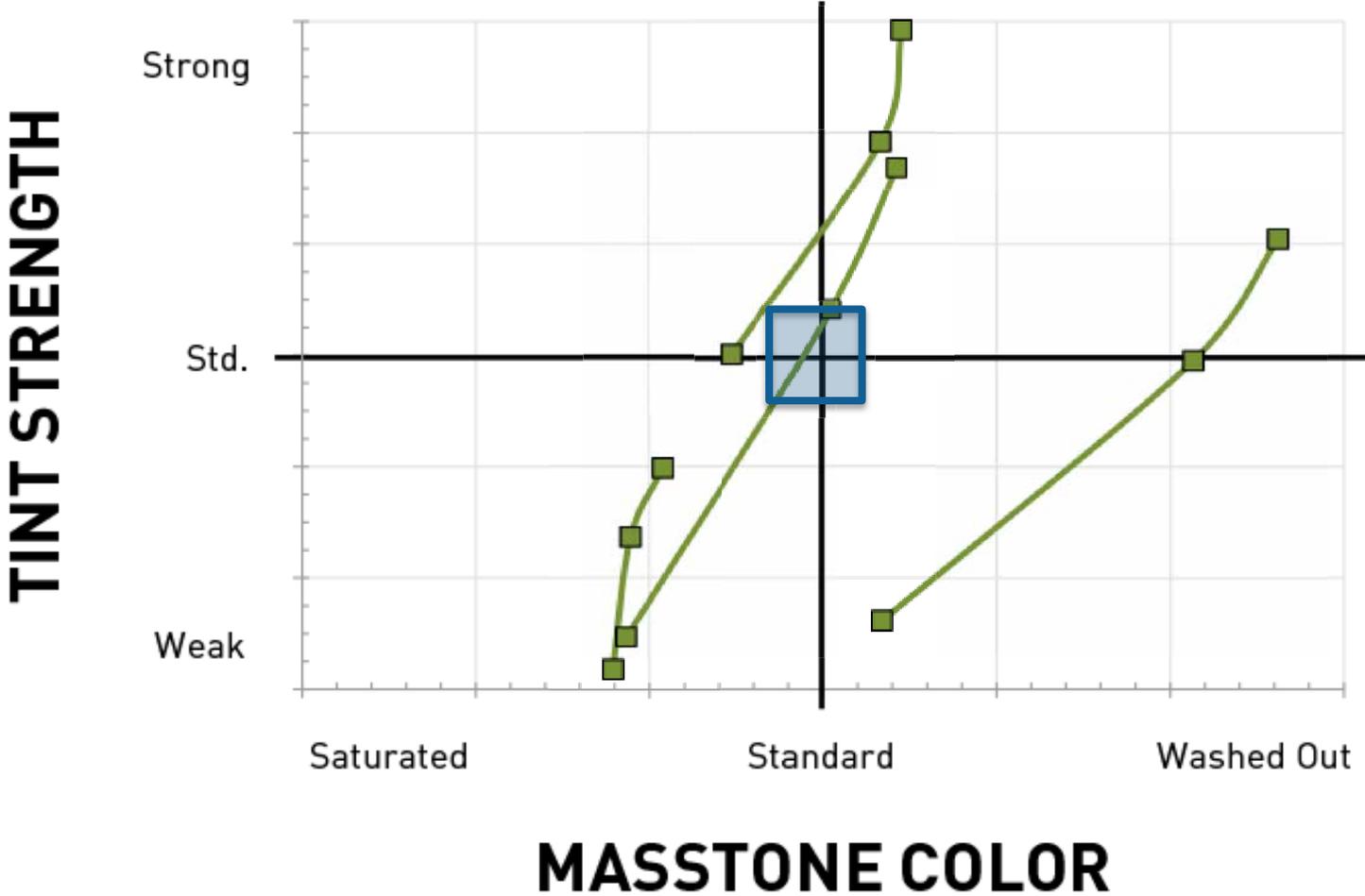


RESIN

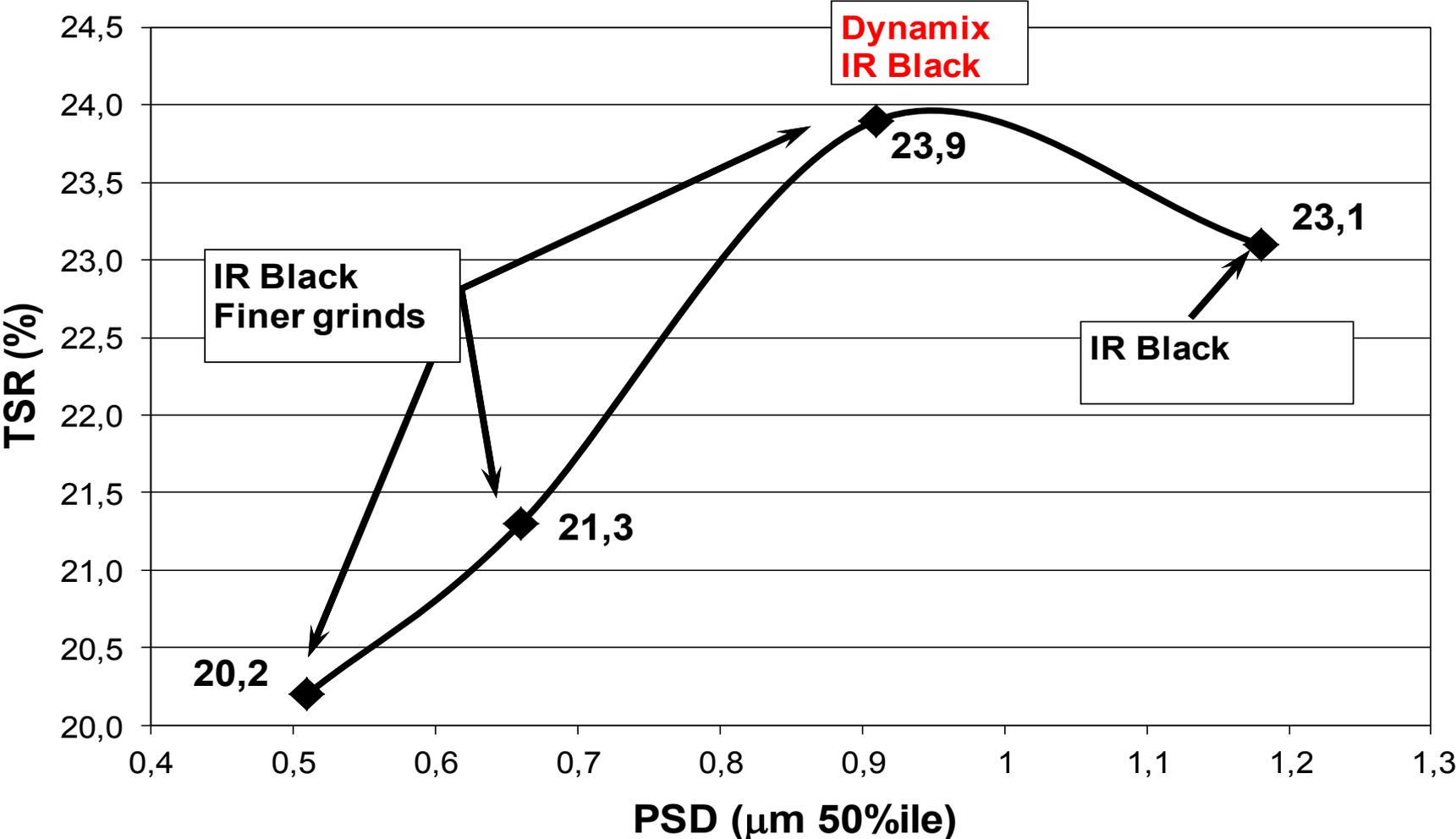


Stable Dispersion

LOCKED IN COLOR



LOCKED IN TSR

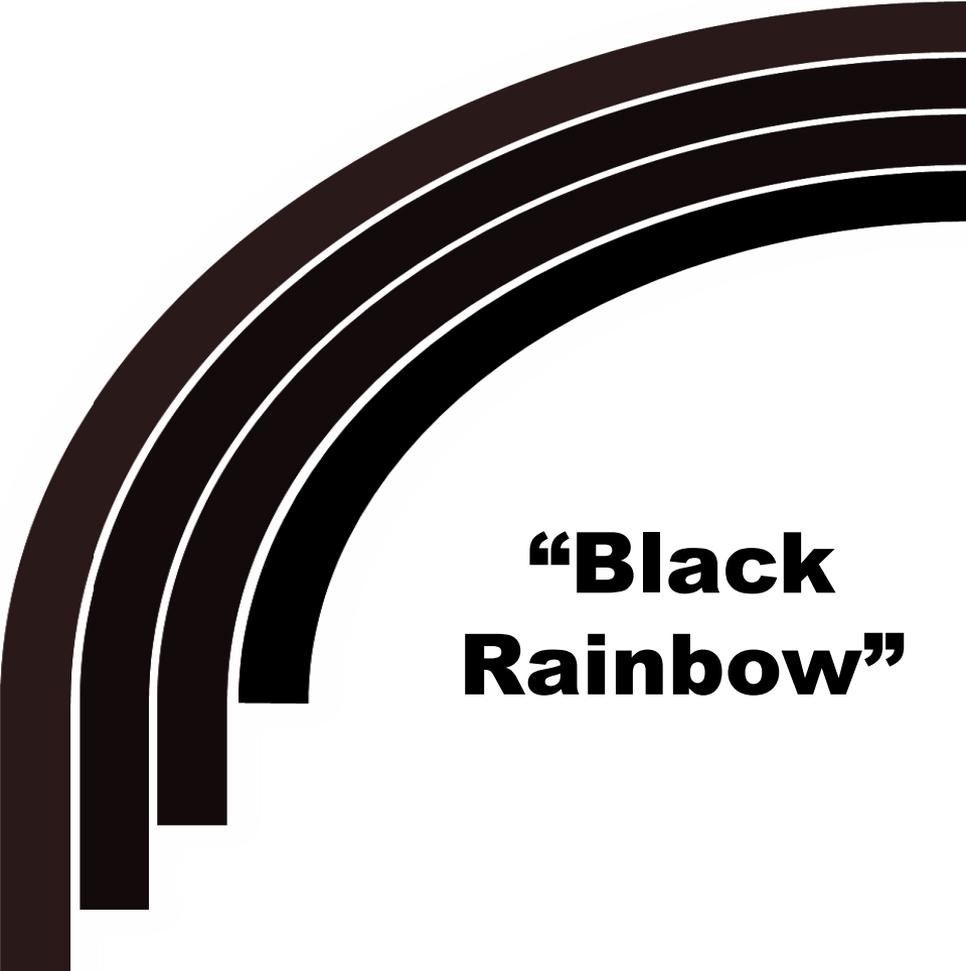


SOLAR HEAT BUILD-UP MGT

- Pigment selection/interactions
- Application variables
- Contamination issues
- Measurement



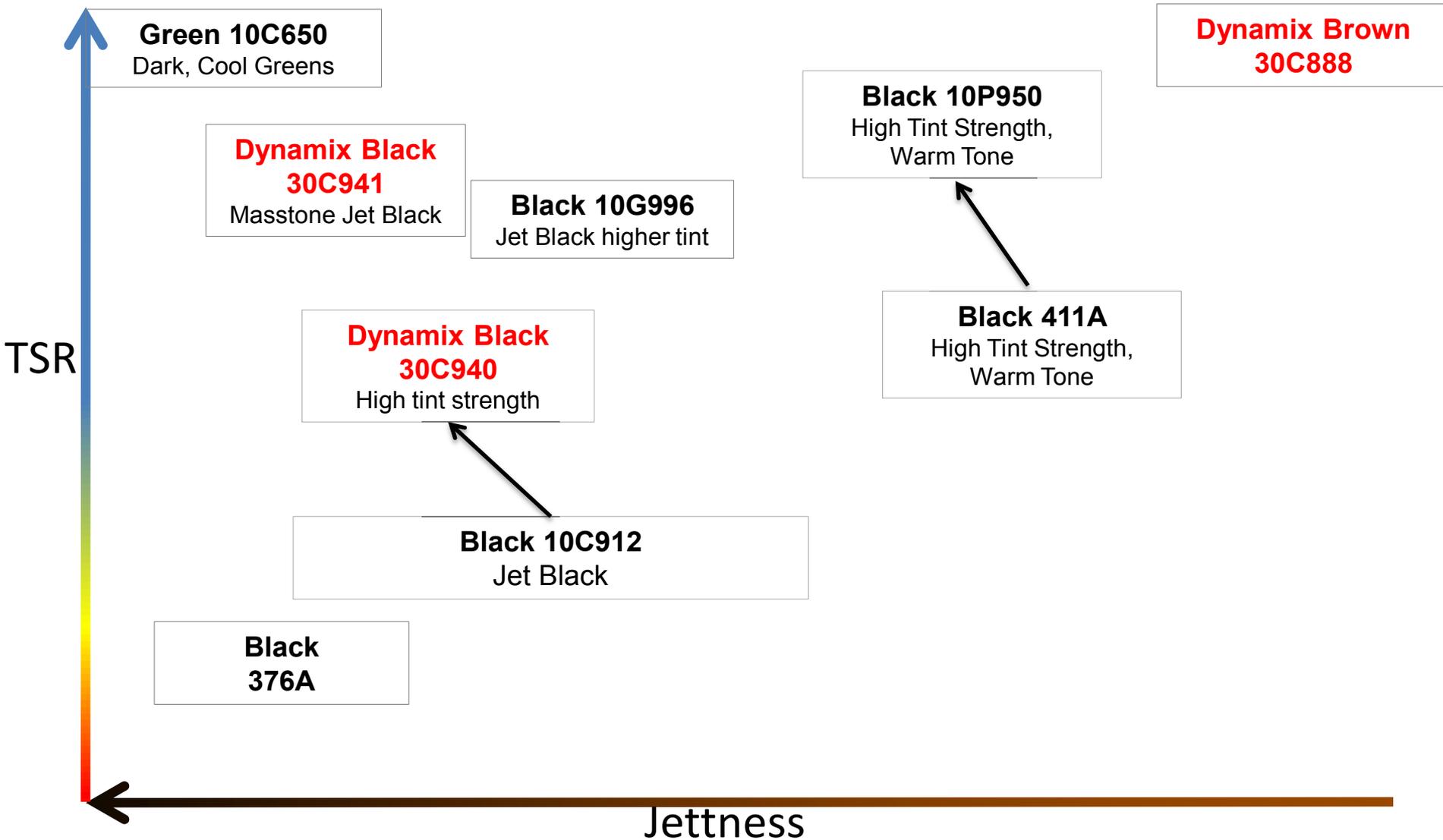
SOLAR HEAT BUILD-UP MGT



**“Black
Rainbow”**



SOLAR HEAT BUILD-UP MGT



PURE PROFITABILITY



SKIP STEPS

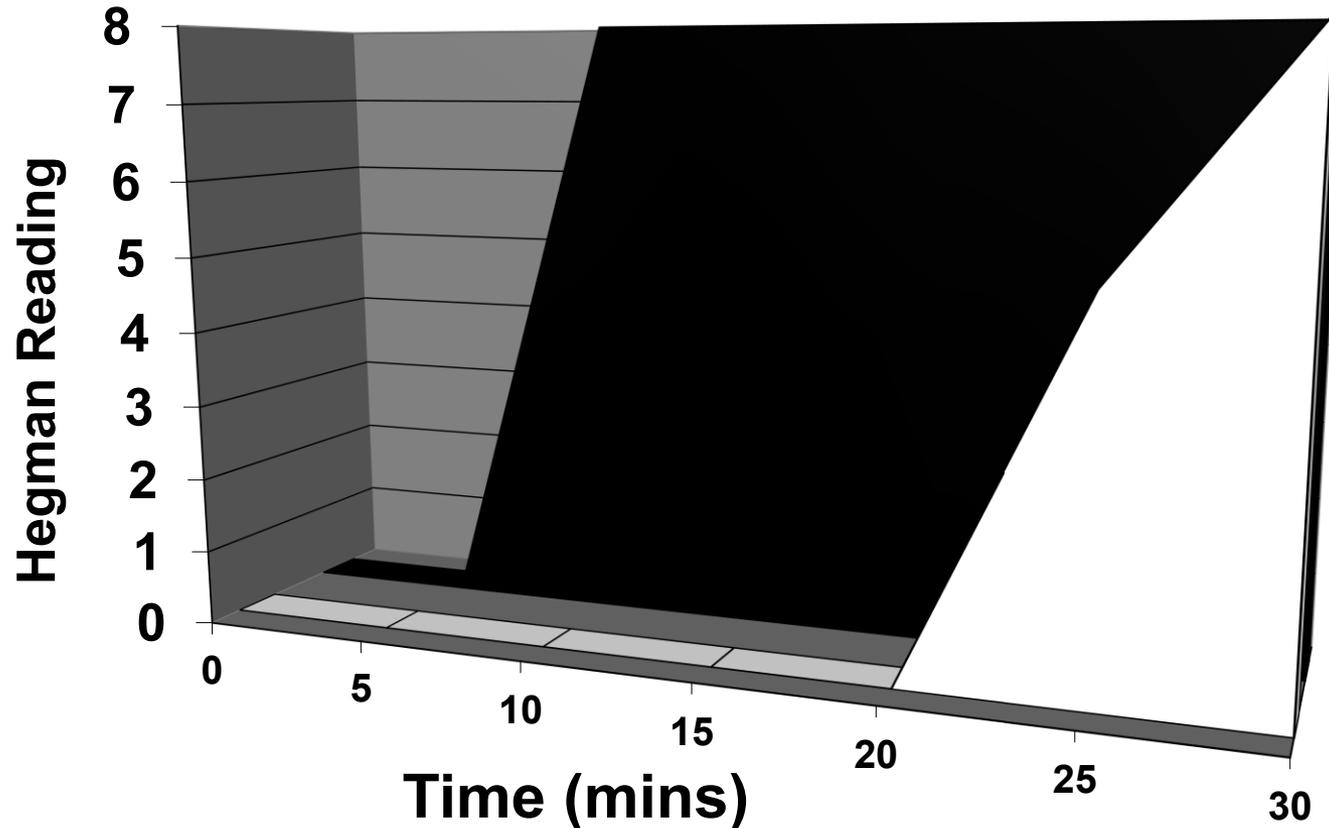
ACHIEVE 100% PURE COLOR
DISPERSIONS WITH DYNAMIX

CREATE PROFIT

JUST
STIR
IT IN

STIR
TO THE TANK

DISPERSION PERFORMANCE



Will disperse faster than easily dispersed TiO_2

Note: Dispersion carried out with high speed dispersion and no additives

PURE SPEED



DRAW-DOWNS DURING MIXING



 **1** minute



 **2** minutes



 **3** minutes



 **4** minutes



 **5** minutes

>50%

REDUCTION IN CYCLE TIME

TINT STRENGTH IMPROVEMENT

Black



Yellow



Significant increases compared to conventionally dispersed pigments to >7.5 Hegman (< 5 microns)

20%

REDUCTION IN TOTAL COST

COST REDUCTIONS



- **Raw Material Inventory**



- **Work In Progress**



- **Intermediate Inventory**



- **Saves CAPEX**



PURE CONSISTENCY

Just Stir It In

Large or Small
Batch Size

Skip Steps for
100% Pure Color

PURE CONVENIENCE

Superior Technology

Always Behaves
the Same

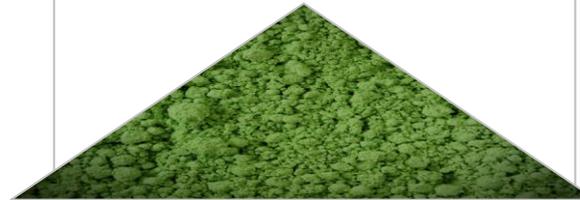
Locked-in Color & TSR

PURE PROFITABILITY

Increase Yields

Spend Less

It's All in the Box





DYNAMIX

Shepherd

The Shepherd Color Company
We Brighten Lives



COMPLETE COLOR PALETTE

Brown product label indicates that the pigment is not Arctic.



DYNAMIX

Yellow 30C119

Green 30C612

Yellow 30C152

Green 30C654

Yellow 30C236

Green 30C678

Orange 30C342



Brown 30C888



Blue 30C588



Blue 30C591



Blue 30C527



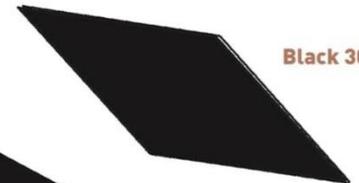
Black 30C965



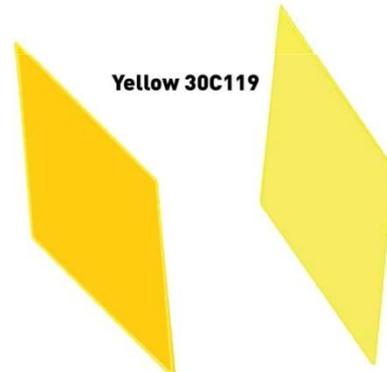
Black 30C940



Black 30C941



Black 30C933



Start with
ARCTIC
IR Pigments for
Cool Coatings

WHAT IT MEANS FOR YOU...



Reduce waste in clean up
and less disposal

Reduce scrap rates by over 50%

Reduced rework

Reduced transportation footprint



Energy savings

More efficient use of pigments

Improved durability by extended
product & polymer lifetime and
color retention up to 50 %

Optimization of resources

**Product
And
Environmental
Stewardship**

Questions?

www.DynamixPigments.com



**MORE
EXPERTISE**



**BETTER
PERFORMANCE**



**BEST
VALUE**