



# Architectural Exterior Coating solutions

*Wanhua Chemical Group Co., Ltd.*  
*Emerging Technology Business Group*  
*Feb.,2021*

# **CONTENT**

01

**Flat paint  
solutions**

02

**Elastic paint  
solutions**

03

**Multi-color paint  
solutions**

04

**Stone paint  
solutions**

05

**Primer  
solutions**

06

**Rheology modifier**

## Plat Paint

Archsol® 8061

*Weathering durability*



Archsol® 8119

## Elastic solutions

Archsol® 8015A

*Better Tensile strength & elongation*



Archsol® 8016

## Multi-color paint

Archsol® 8087  
Continuous phase emulsion

Archsol® 8029  
Dispersed phase emulsion

Archsol® 8086  
Topcoat

## Stone paint

Archsol® 8056A

*Weathering durability*



Archsol® 8037A

*Better low temperature film formation*



Archsol® 8042AA

## Primer

*masking tape resistance*

*pigment*

Archsol® 8223



Archsol® 8210



Archsol® 8220

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**Rheology modifier**

- Archsol<sup>®</sup> 8061 is an anionic pure acrylic emulsion designed for exterior wall paint.

## Features

- Outstanding dirt pick-up resistance
- Excellent early water resistance
- Good colorant compatibility



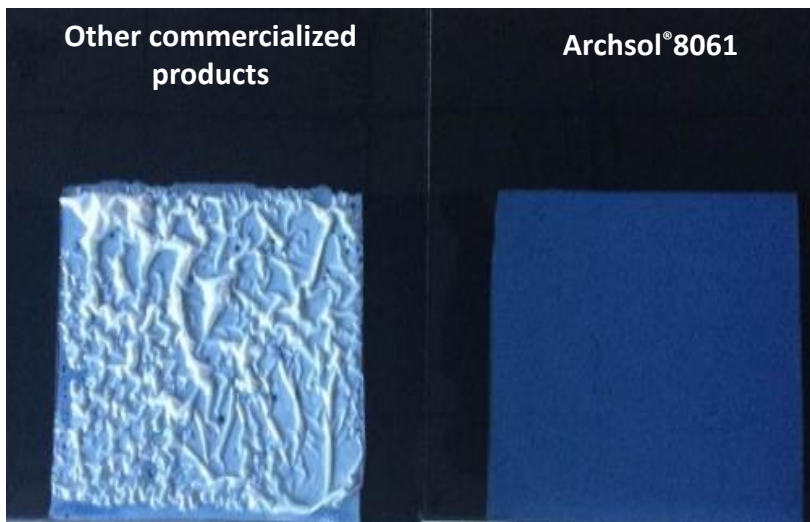
| Items                                                 | Value              |
|-------------------------------------------------------|--------------------|
| Appearance                                            | Milky white liquid |
| Solids , %                                            | 50                 |
| pH                                                    | 7.0-9.0            |
| MFFT/°C                                               | 21                 |
| Viscosity Brookfield<br>( cps, LV, 63#, 60rpm, 25°C ) | 50-1000            |

\*These properties are typical but do not constitute specifications.

## ➤ Water resistance of emulsion

Test methods:

emulsion+4%Texanol; WFT 100μm on glass; curing for 24hrs@Standard conditions; immersed in water for 24hrs



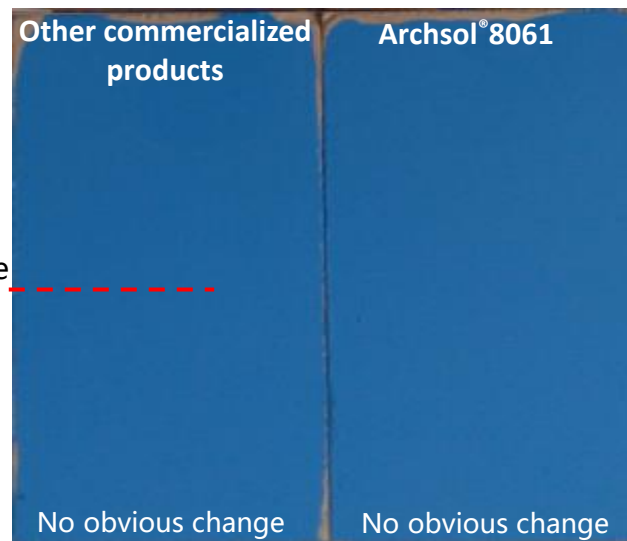
peel off, water-whitening

good adhesion , better water-whitening

## ➤ Water resistance of formulated paint

Test methods:

White paint+3% colorant; WFT 120μm on cement(with primer); curing for 1h@Standard conditions; immersed in water for 24hrs



Waterline

No obvious change

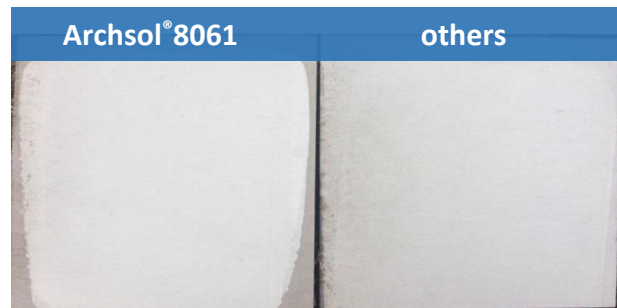
No obvious change

Archsol<sup>®</sup>8061 has good early water resistance, and remain good adhesion even after immersed in water

➤ Weathering test methods :

UVA-340 , 0.68w/m<sup>2</sup> , 1000h ;

| Archsol® 8061               |             |
|-----------------------------|-------------|
| ΔE                          | 0.9/0.8/0.9 |
| Initial gloss<br>60°/85°    | 3.0/7.1     |
| Gloss after1000h<br>60°/85° | 3.2/7.3     |
| Gloss stability             | good        |
| Efflorescence               | None        |



Outdoor exposure: Shanghai, 10 months

➤ DPUR test methods : GB/T 9780-2013 , B

WFT: 120um+80um , time interval 6h , curing@  
standard conditions for 7days; 2 cycles



ΔR=7.8%

ΔR=9.5%

✓ Archsol® 8061 has excellent DPUR

# Archsol<sup>®</sup> 8061- recommended formula



| No.   | Materials                   | Weight/g | Supplier |
|-------|-----------------------------|----------|----------|
| 1     | Water                       | 130      |          |
| 2     | 250HBR/cellulose            | 2        |          |
| 3     | AMP-95/pH adjuster          | 1        | DOW      |
| 4     | NXZ/defoamer                | 2        | Nopco    |
| 5     | BD-109/wetting              | 2        | DOW      |
| 6     | SN-5040/dispersant          | 5        | Nopco    |
| 7     | R-706/ TiO2                 | 170      | DuPont   |
| 8     | DB-80/Kaolin                | 40       |          |
| 9     | CC-800                      | 150      |          |
| 10    | DF-19                       | 1        | Schuelke |
| 11    | Rocima 631                  | 1        | Dow      |
| 12    | 1,3-propanediol/Antifreezer | 21       |          |
| 13    | Archsol 8061                | 340      | Wanhua   |
| 14    | Ultra-E                     | 50       | DOW      |
| 15    | Texanol/coalescent          | 24       | Eastman  |
| 16    | NXZ/defoamer                | 1        | Nopco    |
| 17    | Vesmody <sup>®</sup> U604   | 3        | Wanhua   |
| 18    | Vesmody <sup>®</sup> A801   | 0.5      | Wanhua   |
| 19    | Water                       | 60.5     |          |
| total |                             | 1000     |          |

| Items            | Value   |
|------------------|---------|
| PVC/%            | 44      |
| Weight solids /% | 55      |
| VS/%             | 44      |
| Density          | 1.4     |
| pH               | 8.6-9.0 |





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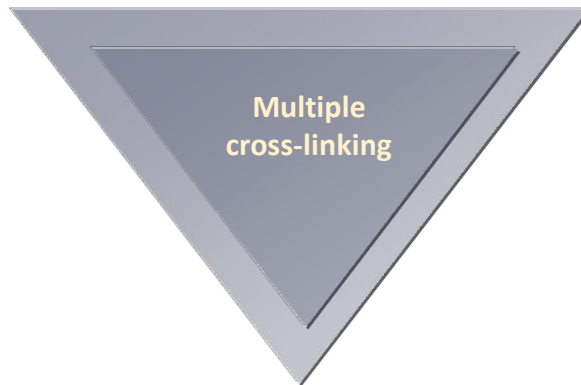
Rheology modifier

## UV crosslinking

- Surface cross-linking density
- Improves stain resistance

## Ionic crosslinking

- Ensure elongation
- Higher tensile strength
- Higher deformation recovery force



## Silicone crosslinking

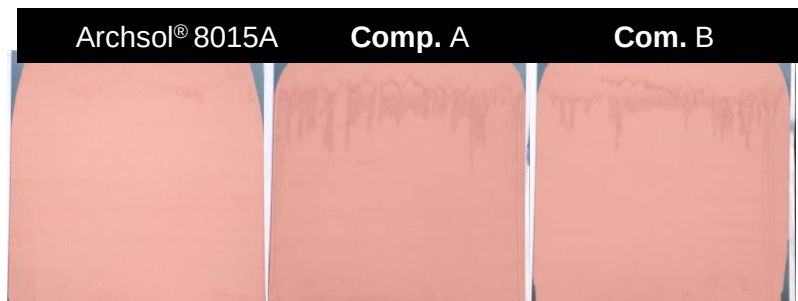
- Improve the binding of pigments and fillers
- Improve the adhesion and resistance

## Features

- Better Tensile strength and elongation
- Excellent elongation in low temperature
- Good early water resistance
- Good alkali resistance

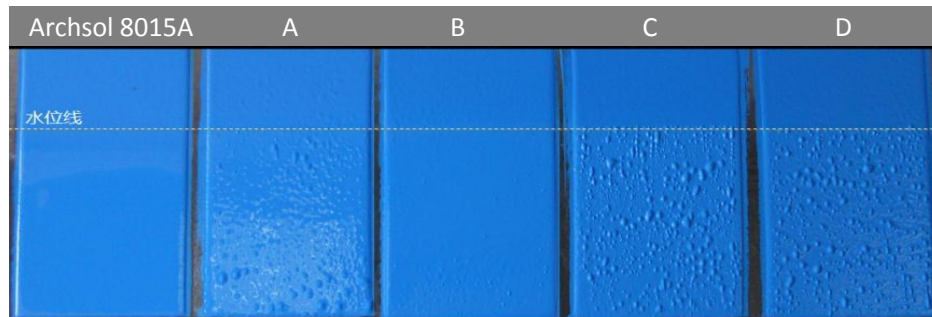
### ➤ Early water print resistance

White paint+3% colorant; WFT 120μm on aluminum curing for 7d@Standard conditions; In condensate box for 4hrs

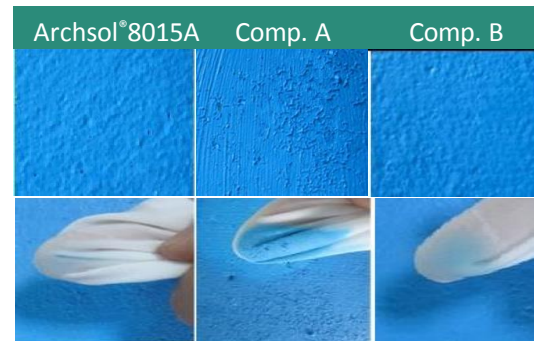


### ➤ Early water resistance

White paint+1% colorant; WFT 120μm on cement(with primer); curing for 30min@Standard conditions; immersed in water for 24hrs



### ➤ Alkali resistance : 20%NaOH,7d



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Rheology modifier

## Features

- MCP continuous phase emulsion
- Inert to synthetic silicate like S482(BYK)/GTS(VANI MIAMI&GASOCUT)
- Good whitening resistance
- Outstanding permeability



stable

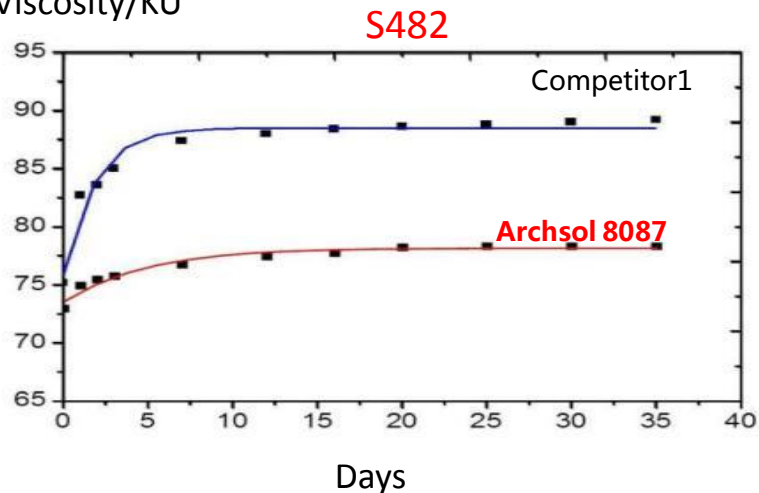
post-thickened

post-thickened

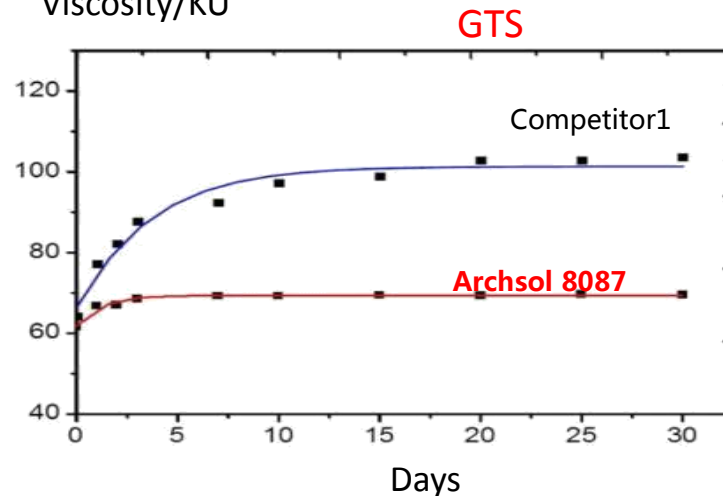
Emulsion : 7%GTS(aqueous solution) =1:1, 5d @25℃, record viscosity change.

Archsol 8087 Paint storage stability @ $23 \pm 2^\circ\text{C}$

Viscosity/KU



Viscosity/KU



- Paint made with Archsol 8087 stabilized fast and kept steadily for a long time
- Record viscosity change in 30ds @  $23 \pm 2^\circ\text{C}$



## Advantage

- Control the spray volume
- Adjust the fill gun
- Improve the project quality

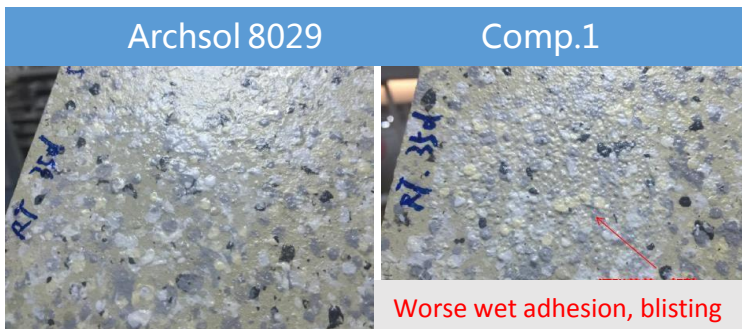


Archsol® 8029, a pure acrylic emulsion with a core-shell structure. Suitable for flat multi-color coatings

## Features

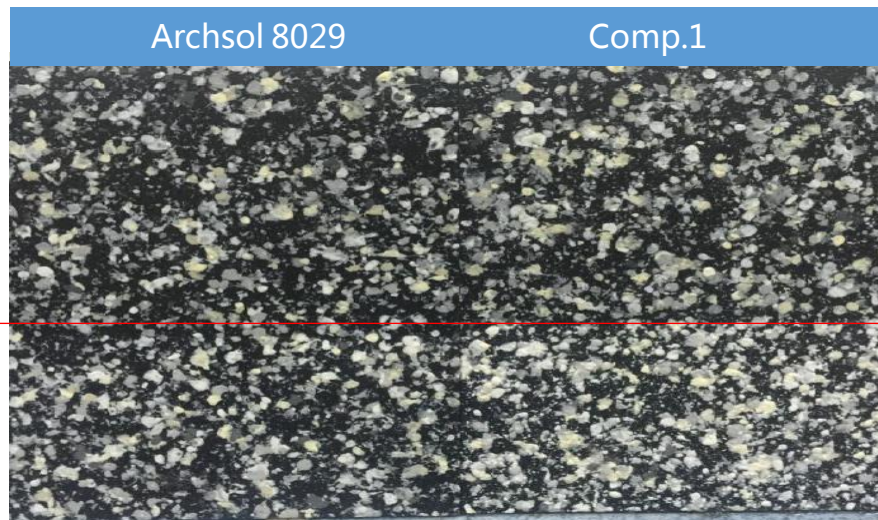
- MCP dispersed phase emulsion
- Good flexibility
- Excellent water whitening resistance and water whitening recovery
- Outstanding weather resistance

## ➤ **Water resistance (dripping, RT, 35d)**



## ➤ **Water whitening resistance**

Spray MCP on the cement (with primer), curing @ 25 °C RH50% for 1d, immersed in water for 2d



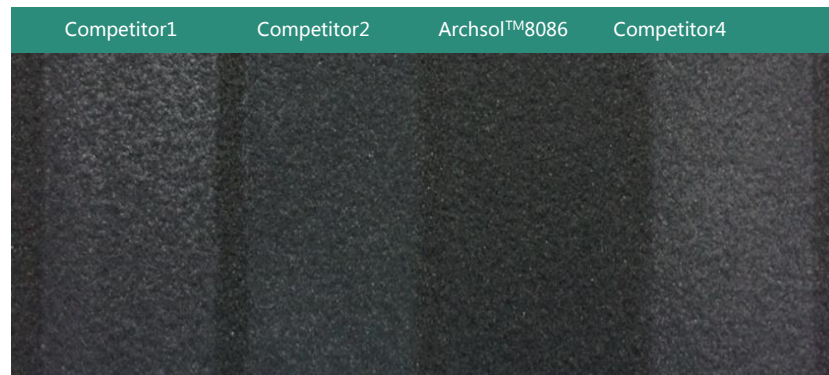


## Features

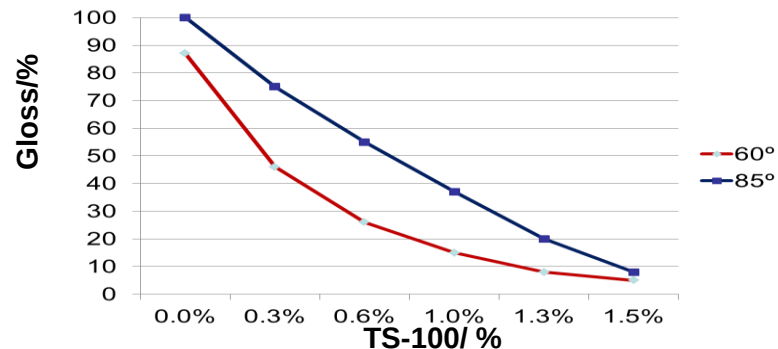
- Good water whitening resistance
- Easy matting
- Good stability
- Good transparency

| Item         | Value      |
|--------------|------------|
| NV%          | $40 \pm 1$ |
| pH           | 7-8        |
| MFFT/°C      | 28         |
| Viscosity/CP | <500       |

### ➤ Good transparency (Matt topcoat)

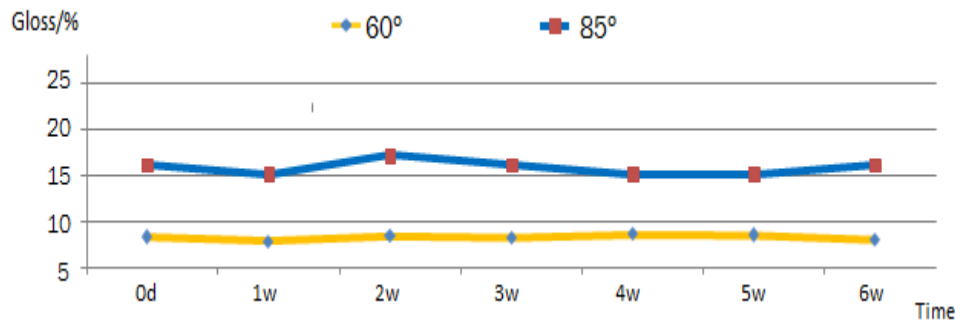
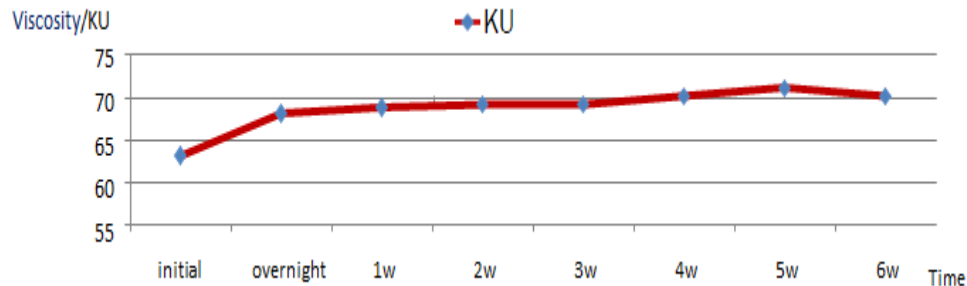


### ➤ Easy matting (Matt topcoat)



※Based on Degussa TS-100 matting agent.

## ➤ Good stability (Matt topcoat)



| Material        | Weight/g | Remarks               |
|-----------------|----------|-----------------------|
| DI Water        | 420      |                       |
| Laponite RD     | 1        | Protective glue       |
| AMP-95          | 2.5      | pH adjuster,DOW       |
| Archsol® 8086   | 400      | PA,Wanhua             |
| Tego825         | 1        | Defoamer, Tego        |
| TS-100          | 13       | Matting agent,Degussa |
| Texanol         | 25       | Coalescent,Eastman    |
| Rocima 631      | 1        | Antiseptic,Dow        |
| DF-19           | 1        | Schuelke              |
| 1,3-propanediol | 8        | Antifreezer           |
| Tego825         | 0.5      | Defoamer, Tego        |
| Vesmody® A406   | 6        | Thickener, Wanhua     |
| DI Water        | 120      | /                     |

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solutions

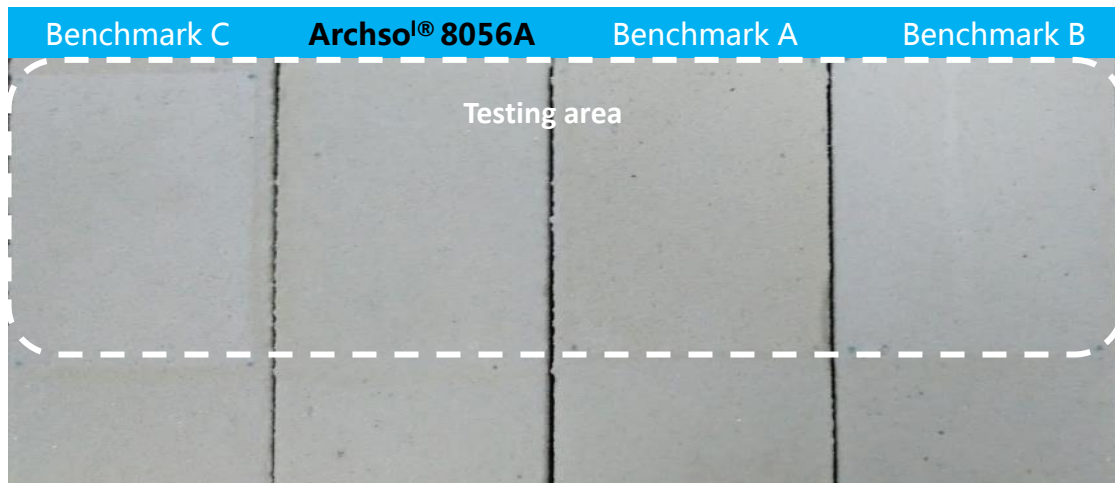
06

Rheology modifier

## ➤ Outstanding weather resistance

### Test method:

Snow white 120-180 mesh, WFT=2mm,  
curing @standard condition for 14d;  
UVA-340, 0.71W/m<sup>2</sup>, UV 4h/60℃,  
condensation, 4h/50℃, cycle for 1000h



| Item                | c  | 8056A | A   | B  |
|---------------------|----|-------|-----|----|
| ΔE                  | /  | 2.3   | 4.5 | /  |
| Efflorescence/grade | 4  | 0     | 0   | 3  |
| Color change/grade  | 0  | 0     | 2   | 0  |
| Crack or bubble     | no | no    | no  | no |

## ➤ Excellent early water whitening resistance and recovery

**Test method:** A4 Cement (with primer), 3.5kg/m<sup>2</sup>, curing @3~5 °C, 40% RH for 18h; Immersed in water for 2d.

Recover: After soaking, drying @ RT(~20 °C) for 1d.



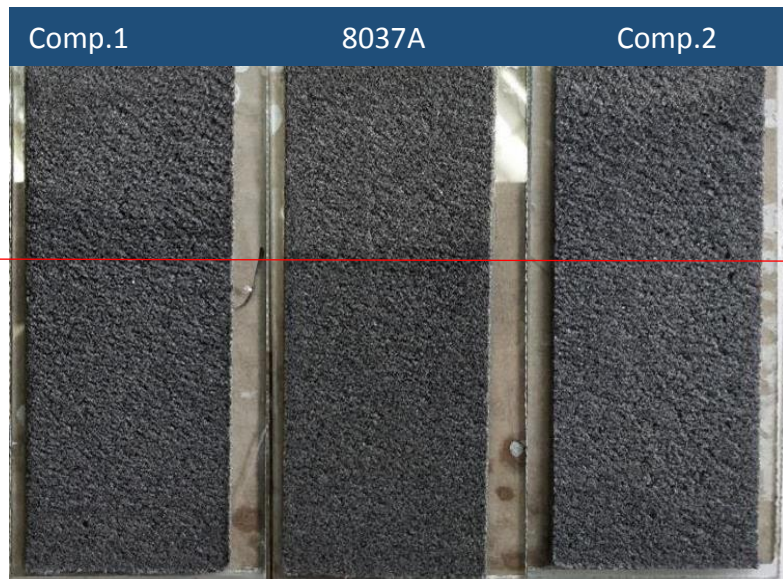
| Material                          | Function        | Weight/g   |
|-----------------------------------|-----------------|------------|
| DI Water                          |                 | 105.2      |
| 250HBR                            | Cellulose       | 1.8        |
| NH <sub>3</sub> .H <sub>2</sub> O | pH adjuster     | 0.5        |
| 1,3-propanediol                   | Antifreezer     | 6          |
| NXZ                               | Defoamer        | 0.5        |
| LXE                               | Antiseptic      | 1.5        |
| M248                              | Antifungal      | 1          |
| <b>Archsol® 8056A</b>             | <b>Emulsion</b> | <b>125</b> |
| Texanol                           | Coalescent      | 7.5        |
| <b>Vesmody® A406</b>              | <b>Thickner</b> | <b>1</b>   |
| Sand 40-80 mesh                   | Filler          | 250        |
| Sand 80-120 mesh                  | Filler          | 500        |
| Total                             |                 | 1000       |

## ➤ Excellent early water whitening resistance and recovery

### Early water whitening resistance--RT

**Method:** 15cm\*7cm glass board, WFT=1mm;  
Curing@23°C&50%RH 18h; Soaking for 6h

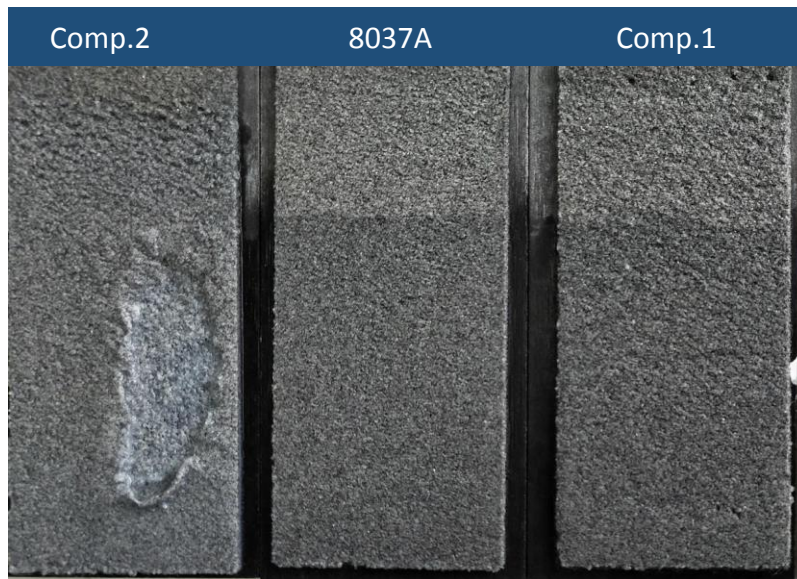
Recover: 23°C & 50%RH, 24h



### Early water whitening resistance—Low temperature

**Method:** 15cm\*7cm glass board, WFT=2mm;  
Curing@7°C&65%RH 18h; Soaking for 6h

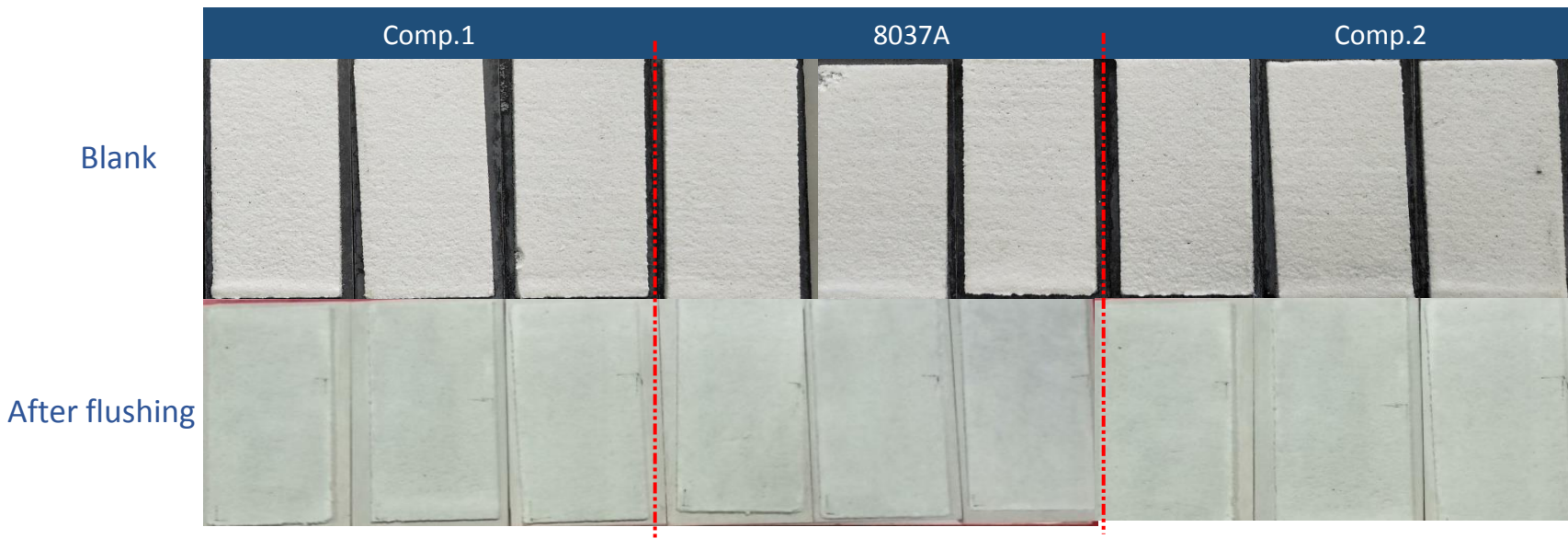
Recover: 7°C & 65%RH, 24h





## ➤ Good dirt pick-up resistance

- Tested in accordance with JG/T 24-2018



- ✓ All above 3 products, the level of DPUR are L2.

## ➤ Good bonding strength

- Tested in accordance with JG/T 24-2018



| Products             | Standard | Comp.2  | 8037A   | Comp.1 |
|----------------------|----------|---------|---------|--------|
| Bonding strength/MPa | ≥0.6MPa  | 0.83MPa | 0.95MPa | 0.7MPa |

✓ Archsol 8037A has better bonding strength.



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Rheology modifier

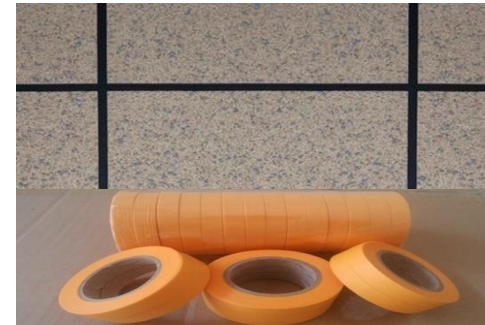
## ✓ Chalking



## ✓ Alkali-out



## ✓ Tearing of masking tape

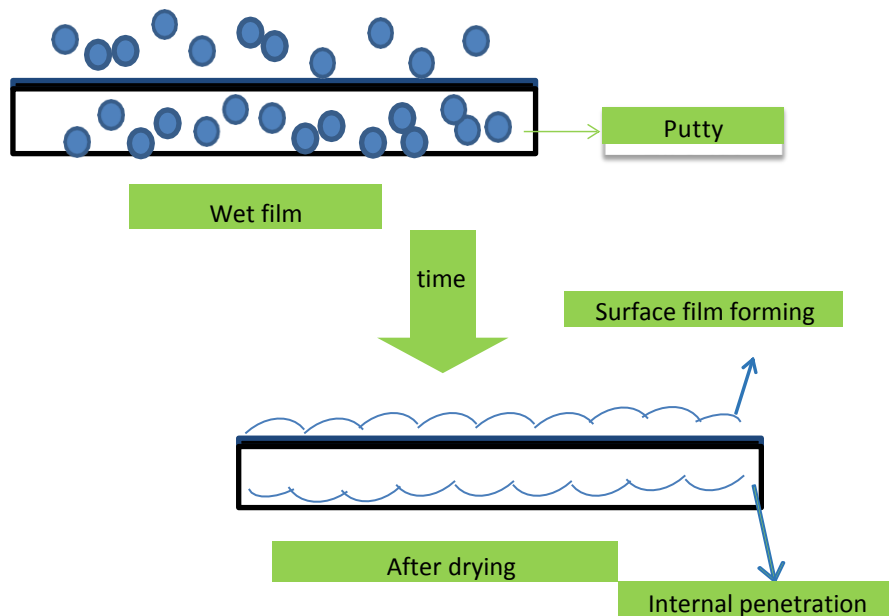


## Features

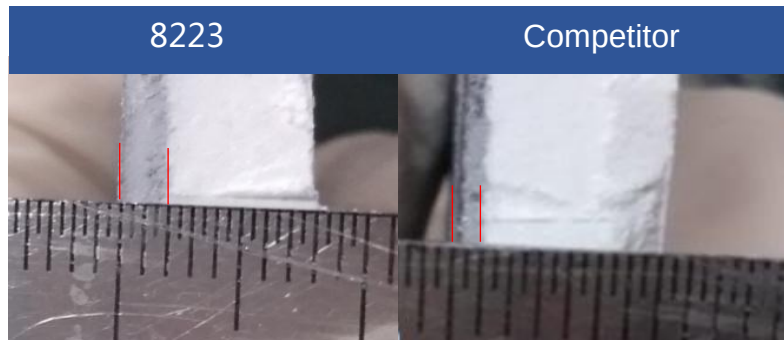
- Excellent permeability on substrate
- Good adhesion
- Excellent masking tape resistance
- Excellent salting-out and alkali resistance

| Property                              | Value       |
|---------------------------------------|-------------|
| Appearance                            | Milky white |
| Solid/%                               | 44±1        |
| pH                                    | 7.0-9.0     |
| MFFT/°C                               | 32          |
| Viscosity<br>(cP, RV 3#, 30rpm, 25°C) | 200-2500    |

## Working mechanism



## ➤ Excellent permeability

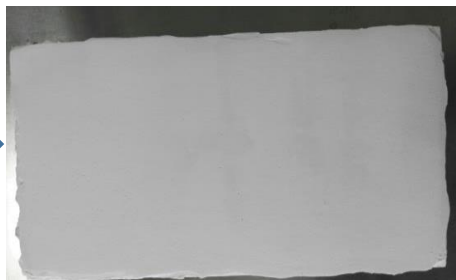


| Material             | Function        | Weight/g   |
|----------------------|-----------------|------------|
| <b>Archsol® 8223</b> | <b>Emulsion</b> | <b>500</b> |
| Texanol              | Coalescent      | 35         |
| NXZ                  | Defoamer        | 3          |
| DI water             | /               | 448        |
| LXE                  | Antiseptic      | 2          |
| DI water             | /               | 2          |
| 1,3-propanediol      | Antifreezer     | 10         |
| Total                |                 | 1000       |

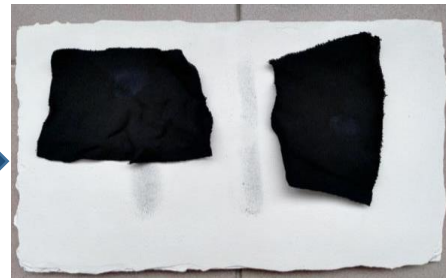
## ➤ Consolidate the chalking putty



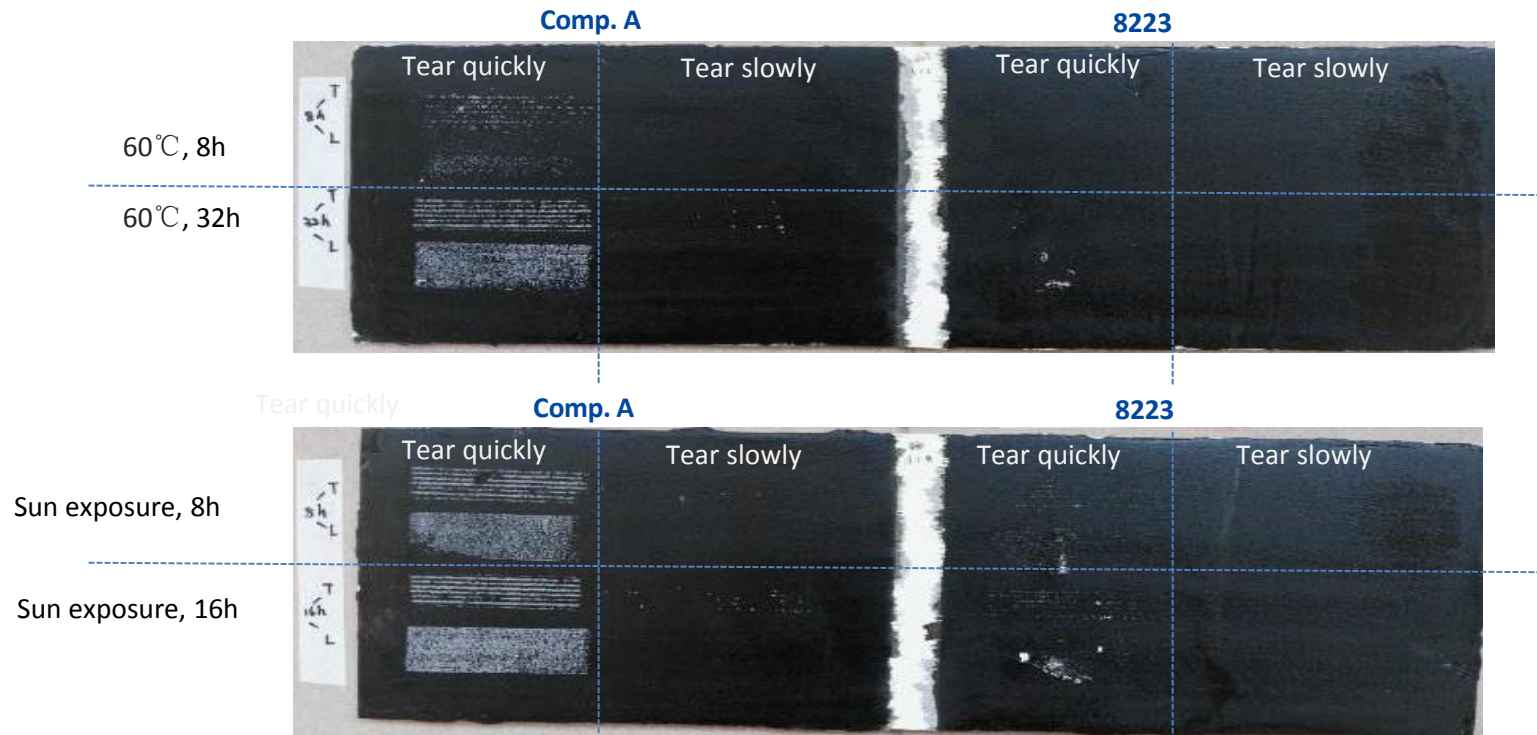
Brushing primer



Wiping with wet cloth



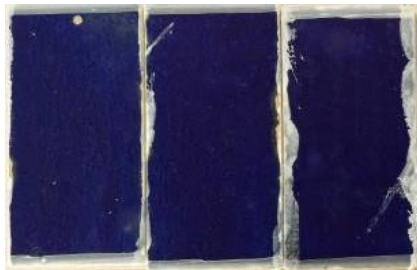
➤ Excellent masking tape resistance



**Test method :** Cement+putty, curing 7d@standard condition; After sanding, brushing primer(9m<sup>2</sup>/kg), curing 24h@standard condition. Paste 2 kinds of masking tape, tear them.

## ➤ Excellent salting-out and alkali resistance

Alkali resistance, 72h



Comp.

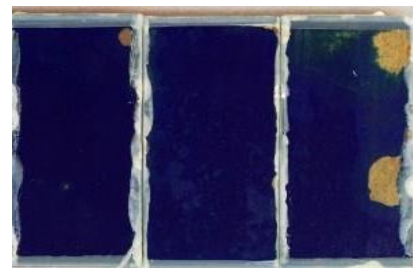
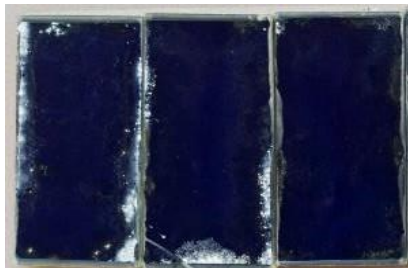
Salting-out resistance, 144h



Salting-out and alkali resistance, 120h



Archsol® 8223



JG/T 210-2007, type I

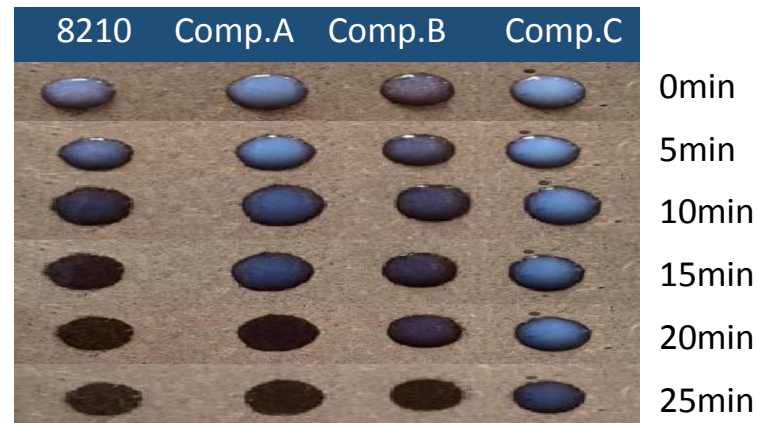
JG/T 210-2018, type I

✓ Archsol 8223 can pass new and old standard

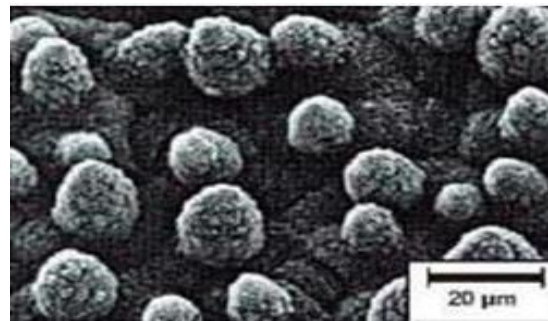
## Features

- Nano particle size, outstanding penetrability
- Excellent salting-out resistance
- Excellent alkali resistance
- Water resistance and breathable
- No need coalescent, easy to use

| Property                              | Value       |
|---------------------------------------|-------------|
| Appearance                            | Milky white |
| Solid/%                               | 30±1        |
| pH                                    | 7.0-9.0     |
| MFFT/°C                               | 0           |
| Viscosity<br>(cP, RV 3#, 30rpm, 25°C) | ≤ 500       |



HDF, observe the penetration at different times



Surface microstructure of lotus leaf



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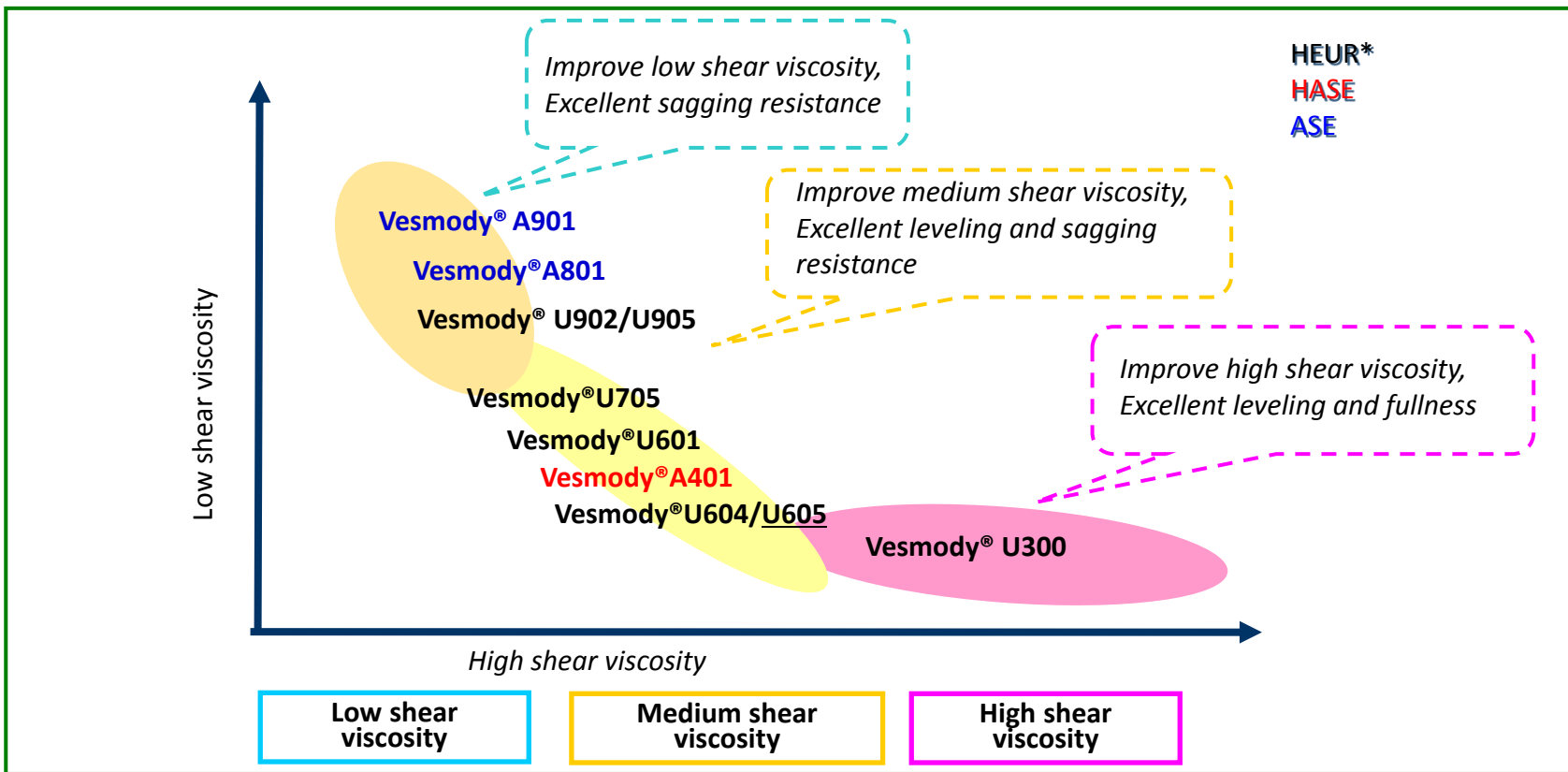
Stone paint  
solutions

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Primer  
solutions

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**Rheology modifier**



\*WANHUA HEURs have extremely low odor and VOC.



创新成就卓越 INNOVATION CREATES EXCELLENCE