



Archsol[®] 8171 & 8172 & 8169 - low odor formaldehyde purification interior coating solution

Emerging Technology Business Group

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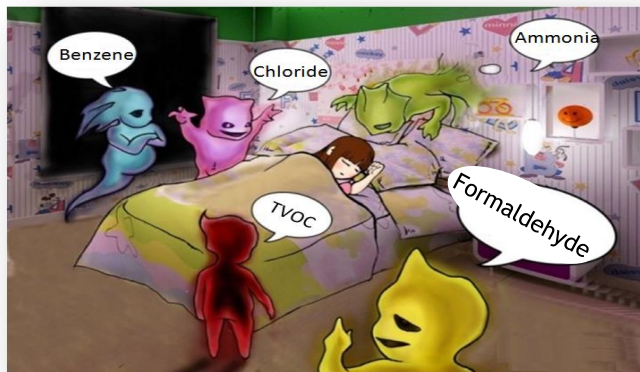
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Indoor air pollutants



Four categories of Organic compounds in the air

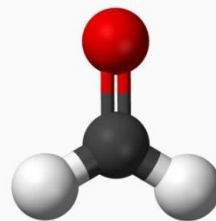
Boiling point between 0°C and 50°C, **VVOC**

Boiling point between 50°C and 240°C, **VOC**

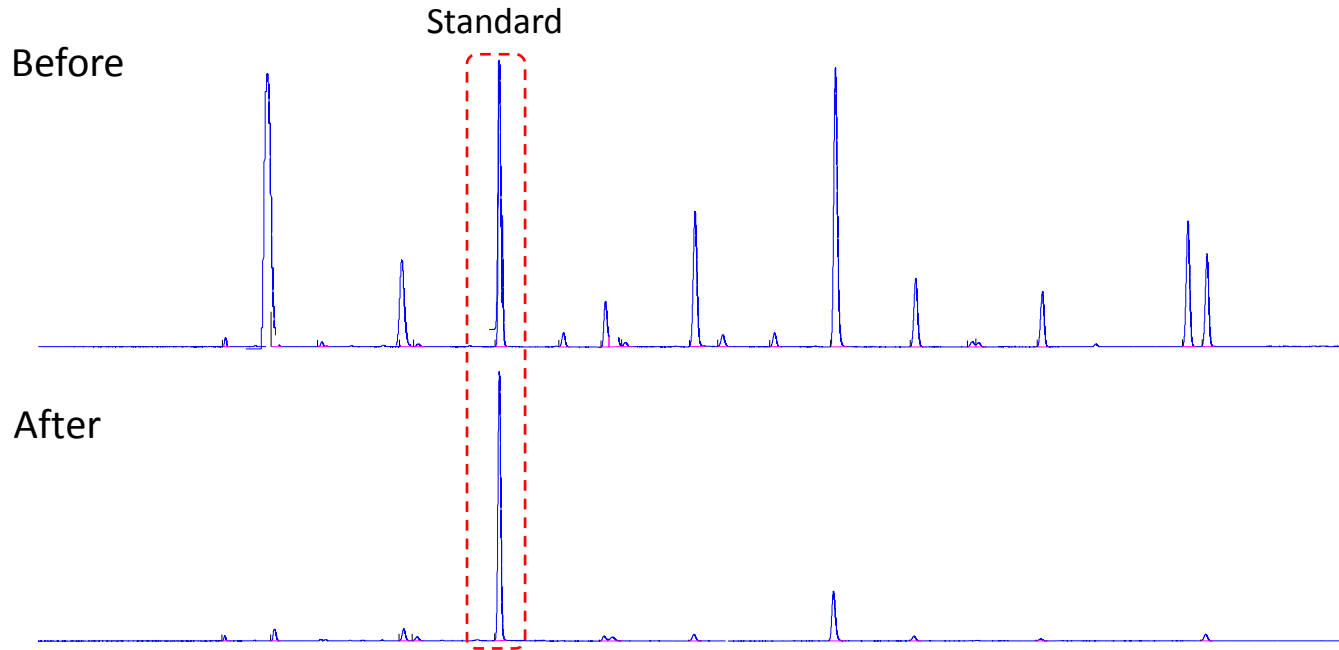
Boiling point between 240°C and 380°C, **SVOC**

Boiling point over 380°C, **POM**

Indoor formaldehyde sources



世界卫生组织
在2004年发布的153号公告
中明确指出——甲醛致癌。



- VOC Removal is an efficient technology to reduce VOC content and odor

Petro-based



Bio-based



What Are Biobased Products?

Biobased products are derived from plants and other renewable materials, which provide an alternative to conventional petroleum derived products.

USDA BioPreferred® Program

The program's purpose is to increase the use of renewable resources, which contribute to reducing adverse environmental and health impacts.

Two major parts of the program:

- **mandatory** purchasing requirements for federal agencies and their contractors;
- **voluntary** labeling initiative for biobased products.

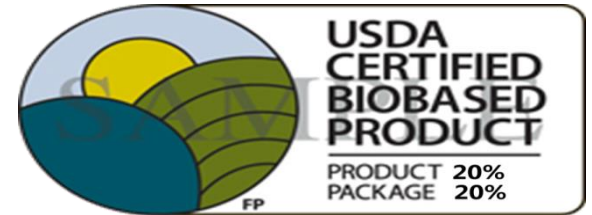
Biobased Test: ASTM D6866

Biobased content testing is to determine how much of the carbon within their product is derived from biomass, by measure the Carbon-14.

Interior Paints and Coatings - Latex and Waterborne Alkyd [link](#)

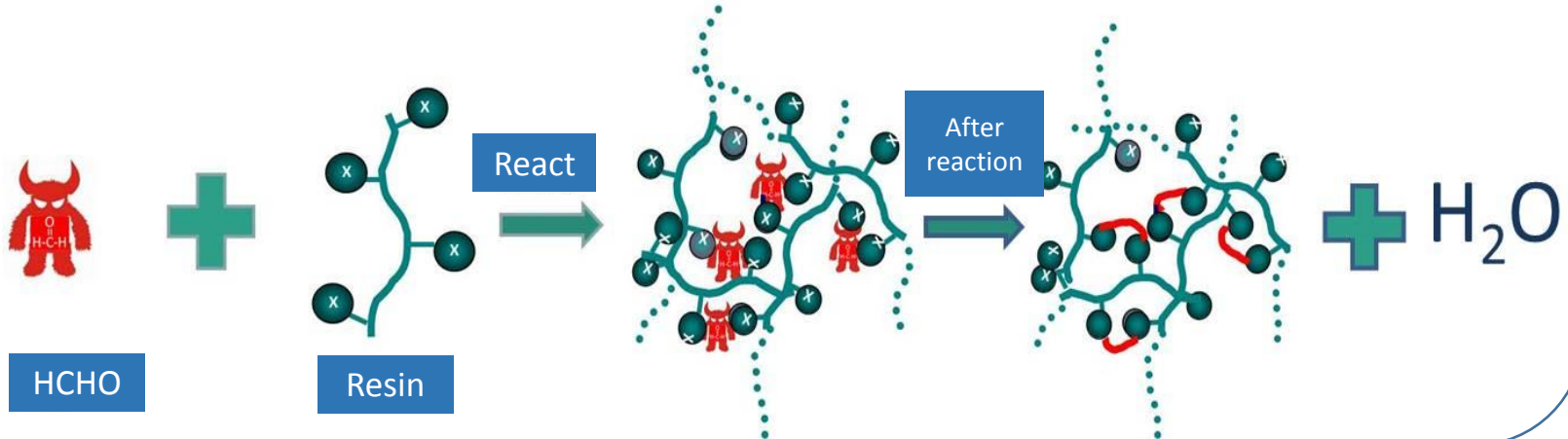
Description: Pigmented liquids, formulated for use indoors, that dry to form a film and provide protection and added color to the objects or surfaces to which they are applied.

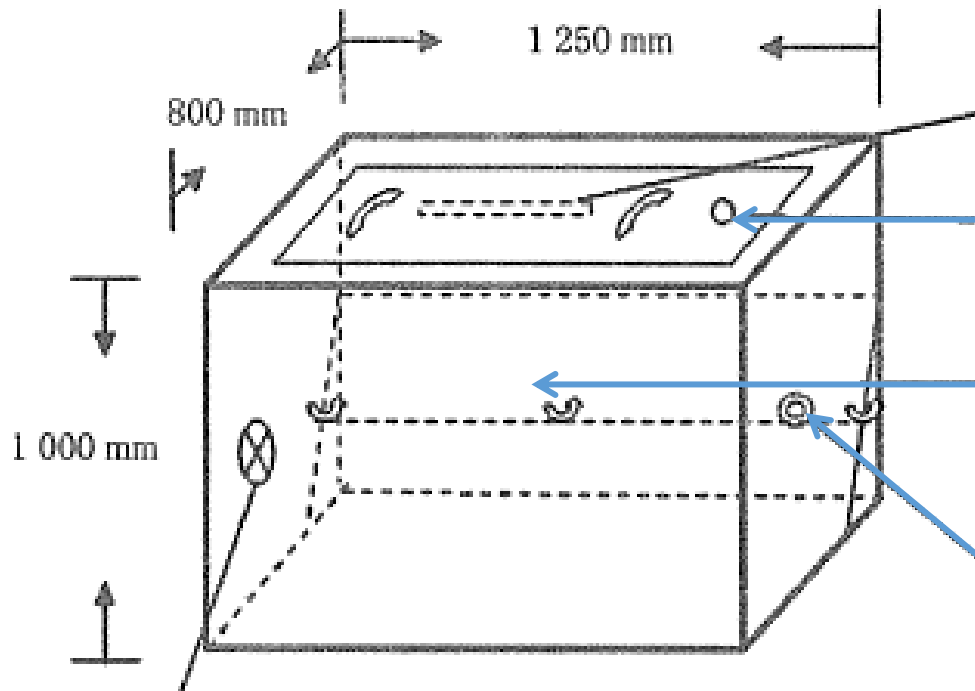
Minimum Biobased Content: 20%



Traditional formaldehyde purification products can only physically absorb formaldehyde in the air, and once the adsorption is saturated, when the environmental conditions change, desorption will occur and re-release formaldehyde

Wanhua innovative formaldehyde purification emulsion is developed by introducing high-efficiency formaldehyde removing group on the polymer chain segment, which can rapidly react with formaldehyde, thus permanently fix and kill free formaldehyde in the air.





2. Inject same HCHO solution into two cubes.

1. Put 4 coated panel inside of the cube, and put 4 blank panel in another same cube for comparison.

3. Collect air sample at 1h and 24h after injection and test HCHO concentration.

Calculate formaldehyde purification efficiency based on result from two cubes

Formaldehyde purification durability:

1. Put 4 coated panel inside of the cube, inject HCHO solution every day, for 4 days.
2. Take out the panel and leave it at room temperature for 1 day.
3. Test HCHO purification efficiency according to step 1, 2, 3

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FEATURES

- Low odor
- Excellent low temp film forming property
- Excellent scrub resistance
- Formaldehyde & toluene purification
- Biobased



Properties	Value
Appearance	Milky white
Solids, %	48±1
pH	7.5-9.5
MFFT, 'C	0
Viscosity, (mPa·s, Brookfield, LV, 6 2#, 30rpm, 25'C)	10-700

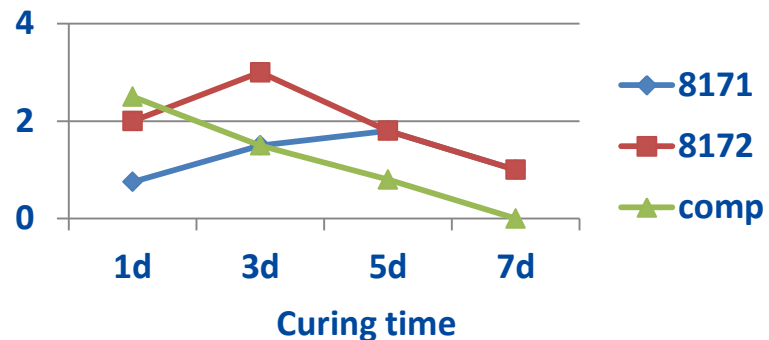
- Low odor

Odor scoring criteria : 0-5 , 0 is the best(odor free, or pleasant odor)

Method: 200 μ m , 15cm*10cm, store in 1L glass bottle, curing for 7d

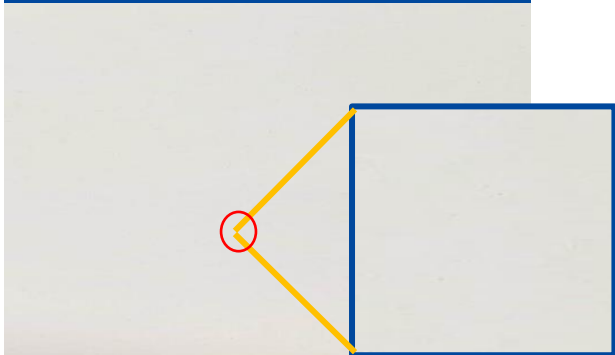


Score

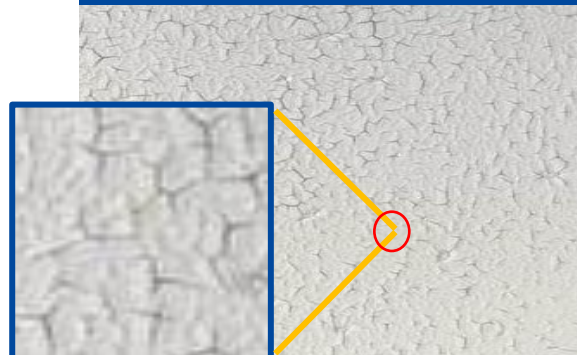


- Excellent film forming at low temp.

Archsol® 8171



Benchmark



- Excellent scrub resistance



- Excellent storage stability

Test condition	Δ KU (Stormer)	Δ cp (Brookfield,6#,60rpm)
Freeze thawing (-7°C, 3cycles)	1.4	17
50°C , 1 week	0.1	33

Archsol® 8171- recommended formula (high quality)



Material	Function	Weight /g	Supplier
Water		200	
250HBR	Cellulose	4	Ashland
Na ₂ CO ₃	pH adjuster	1	
Water		10	
BD-109	Wetting agent	2	Dow
Vesmodity® C20	Dispersant	5	Wanhua
NXZ	Defoamer	2	Nopco
R-996	Pigment	200	
CC-800	Filler	150	
DB-80	Filler	50	
DF-19	Preservative	1	
Vesmodity® H400	Opacity polymer	50	Wanhua
NXZ	Defoamer	1	Nopco
Archsol® 8171	Emulsion	300	Wanhua
Coasol 290	Coalescent	3	Dow
FT-100	Anti-freezing	5	
Vesmodity® U300	HEUR	5	Wanhua
Water		10	
LX 150	Biocide	1	Dow
total		1000	

Basic information	
PVC	43.93%
Viscosity	108KU
L/a/b	96.4/-0.3/3.4
Hiding power	0.966
Whiteness	90.6
Freeze thawing (-7°C, 3cycles) ΔKU	Pass , + 1.4KU



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FEATURES

- Excellent formaldehyde & toluene purification
- Excellent scrub resistance
- Extra Low odor, low VOC, APEO free
- Excellent low temp film forming property
- Biobased



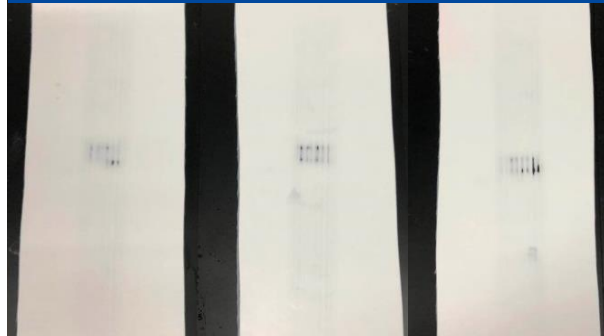
Properties	Value
Appearance	Milky white
Solids, %	48 ± 1
pH	7.5-9.5
MFFT, 'C	12
Viscosity, (mPa·s, Brookfield, LV, 6 2#, 30rpm, 25'C)	100-500

- Excellent scrub resistance

Chinese standard(40000 times)

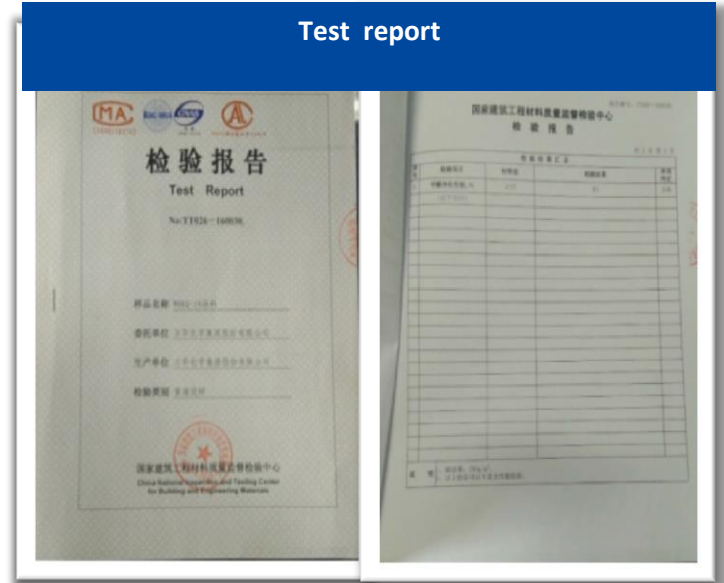


ASTM D2486(660 times)



- Excellent formaldehyde purification

Test report



Formaldehyde purification efficiency 87%

Formaldehyde purification durability 67%

Archsol® 8172- recommended formula (high quality)



Material	Function	Weight /g	Supplier
Water		180	
250HBR	Cellulose	2.5	Ashland
10%NaOH	pH adjuster	1	
BD-109	Wetting agent	2	Dow
Vesmodity® C20	Dispersant	5	Wanhua
NXZ	Defoamer	2	Nopco
R-996	Pigment	230	
CC-800	Filler	50	
DB-80	Filler	150	
Diatomite		20	
DF-19	Preservative	1	
NXZ	Defoamer	1	Nopco
Archsol® 8172	Emulsion	300	Wanhua
Coasol 290	Coalescent	15	Dow
FT-100	Anti-freezing	5	
Vesmodity® U300	HEUR	5	Wanhua
Vesmodity® U604	HEUR	5	Wanhua
Water		25	
LX 150	Biocide	1	Dow
total		1000	

Basic information	
PVC	45%
Viscosity	105KU
L/a/b	96.1/-0.2/3.3
Hiding power	0.952
Whiteness	90.3
Freeze thawing (-7°C, 3cycles) ΔKU	Pass , + 4KU



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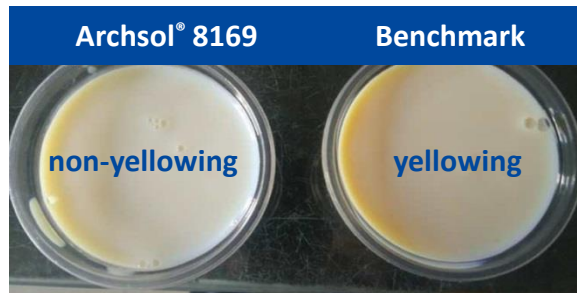
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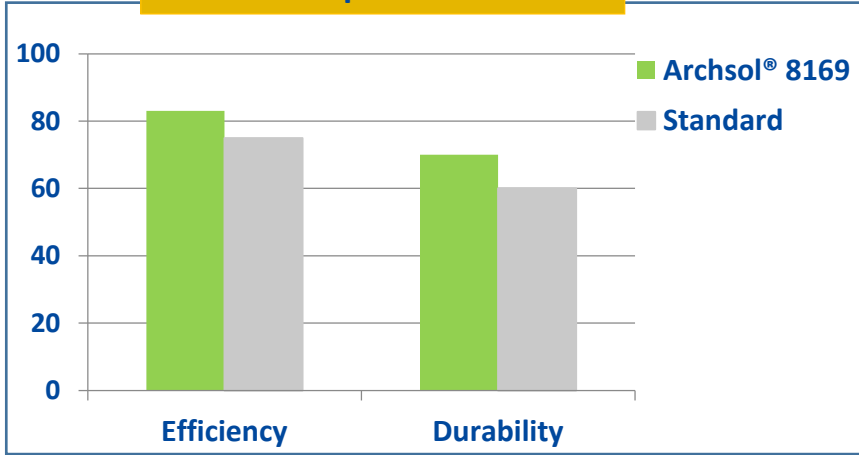
FEATURES

- High cost effective
- Good storage stability, non-yellowing
- Excellent scrub resistance
- Excellent early chalking resistance
- Formaldehyde & toluene purification

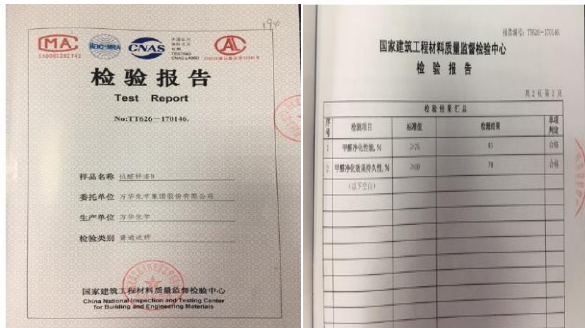


Properties	Value
Appearance	Milky white
Solids, %	48 ± 1
pH	7.0-9.0
MFFT, 'C	2
Viscosity, (mPa·s, Brookfield, LV, 62#, 30rpm, 25'C)	0-1000

HCHO purification



Early chalking resistance



* Emulsion dosage 13%

Archsol® 8169- recommended formula (economic)



Materials	Function	Weight/g	Supplier
Water		346	
250HBR	cellulose	5.5	Ashland
AMP-95	pH adjuster	0.5	Dow
BD-109	Wetting agent	2	Dow
Vesmody® C20	Dispersant	5	Wanhua
NXZ	Defoamer	2	Nopco
R-996	Pigment	90	
CC-800	Filler	140	
CC-1250	Filler	140	
DB-80	Filler	70	
Kaolin	Filler	50	
LX 150	Biocide	2	Dow
DF-19	Preservative	1	
NXZ	Defoamer	1	Nopco
Archsol® 8169	Emulsion	130	Wanhua
coasol 290	Coalescent	10	Dow
FT-100	Anti-freezer	5	
Total		1000	

Basic information	
PVC/%	72%
Viscosity/KU	105
Hiding power	0.95
Gloss 60°、85°	<5





创新成就卓越 INNOVATION CREATES EXCELLENCE

