

HIGH-PERFORMANCE ACRYLIC RESINS FOR INDUSTRIAL WOOD

North America



Agenda

- Industrial Wood
- Application segmentation and needs
- EPS® Product Portfolio
- EPS® 2400 Series
- Questions

Industrial Wood

Wide range of substrates

Large wood

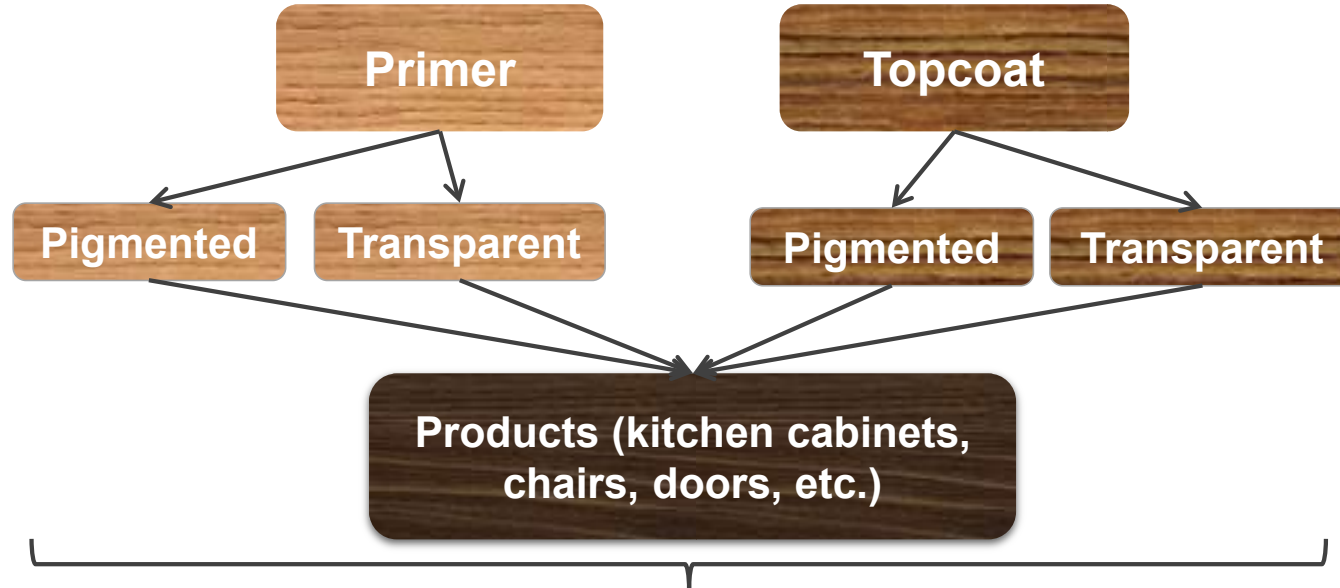
Engineered wooden surfaces

- Veneered chip board or particleboard
- Melamine foil
- Medium Density Fiberboard / MDF (different qualities)

Engineered wood introduces multiple additional challenges

- Fiber swelling
- Lack of adhesion
- Substances migration

Industrial Wood Coatings



EPS® 2400 Series

Primers

Typical Requirements

- Grain enhancement
- Sandability
- Pore type
- Low fiber rising
- Body

Transparent Primer

- Sandability
- Body/coverage
- Low fiber rising
- No “removal” once recoated

Pigmented Primer

Topcoats

Typical Requirements

- High transparency
- Quick drying/fast hardness development
- High scratch resistance
- High chemical resistance
- Non-blocking
- Nice and smooth surface (self-levelling)

Transparent topcoat

- Quick drying/fast hardness development
- High scratch resistance
- High chemical resistance
- Non-blocking
- Nice and smooth surface (self-levelling)

Pigmented topcoat

Grain Enhancement

Appearance is critical

- Combination of transparency, wood warming and wood wetting
- Different woods types respond differently on the same resin
- Different resins have different enhancement on same wood



Block resistance

Fast block, quick handling, fast stackability

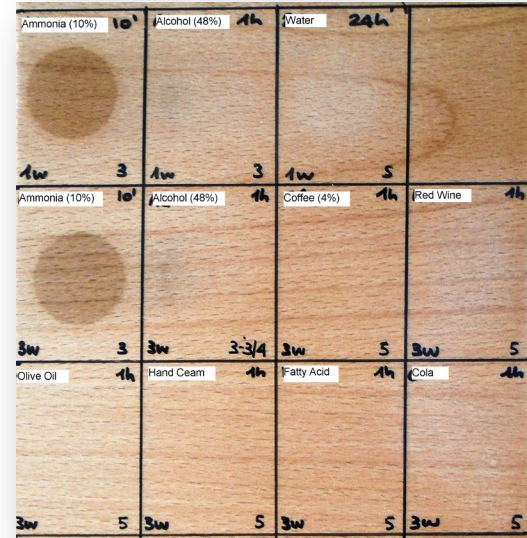
- Resistance of coating to adhering to itself when pressed in contact for a period of time
- No ISO norm, conditions can be different from customer to customer



Chemical resistance

Key for end application

Coating surface's ability to withstand discoloration or gloss change when in contact with staining liquid/chemicals.



EPS® Industrial Wood

EPS® 2400 series	Industrial Wood Application										
	Interior Clear			Interior Pigmented			Exterior				
	Primer	Self-Sealer	Topcoat	Primer	Self-Sealer	Topcoat	Primer Clear	Topcoat Clear	Primer Pigmented	Self-Sealer	Topcoat Pigmented
EPS® 2420								X			X
EPS® 2426										X	
EPS® 2430		X	X								
EPS® 2452						X					
EPS® 2454	X	X									
EPS® 2458	X	X	X	X	X		X		X		

EPS® 2420



Use: Topcoat

Market: Industrial Wood

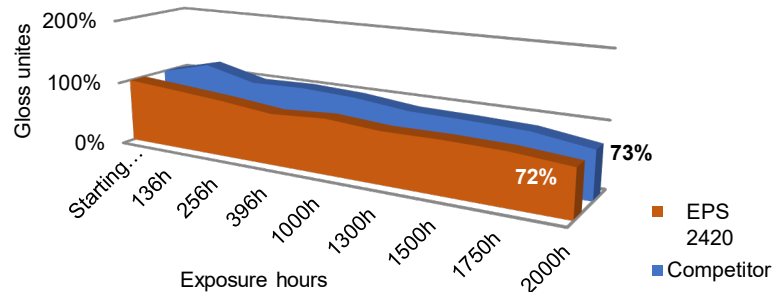
Self-Crosslinking All-Acrylic Emulsion for Joinery with an Excellent Balance of Properties

EPS 2420 a binder for interior and exterior wood applications such as multi-coat, enamels and varnishes with exceptional leveling properties and UV resistance. In-can transparency is a key feature of this product.

- Exceptional leveling
- Clear in-can
- Excellent block
- Exterior durability
- Medium hardness
- Good flexibility
- Good early water and water resistance
- Good stackability
- Low water uptake
- High transparency
- APE-free *

EPS® 2420

QUV test – Gloss retention (2000h QUV-A test based on clear transparent topcoat formulation)



Water absorption (based on clear transparent topcoat formulation and commercial competitor product, ~4 mil DFT on wood block)

Product	Water up-take (lb/ft ²)
EPS 2420	0.0262
Competitor	0.0256

According to EN 927-5

Stackability (based on clear transparent topcoat formulation and commercial competitor product, 12 mil WFT on black leneta)

Test	EPS 2420	Competitor
72 hours in ambient condition	5	4/5

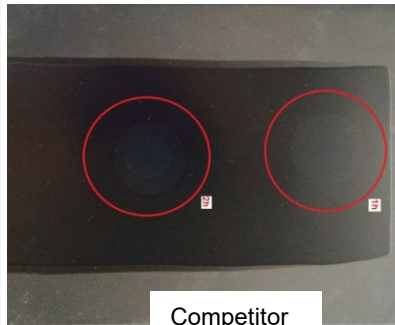
5 = no damage, 1 = coating failure. Pressure ~ 30 psi

EPS® 2420

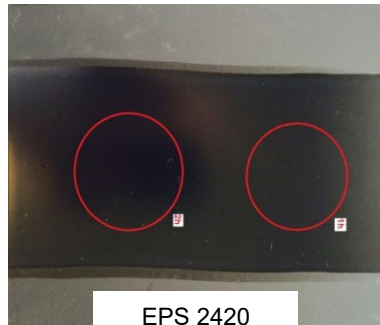
Early water resistance (24 hours dry in ambient conditions. Based on clear transparent topcoat formulation vs commercial competitor product)

Product	1 hour	2 hours	24 hours
EPS 2420	5	5	4
Competitor	4/5	4	3

After recovery time (1 hour)



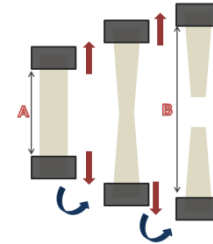
Competitor



EPS 2420

Elongation at break (based on clear transparent topcoat formulation and commercial competitor product, ~ 4 mil dry samples – 0.6 in width)

Product	After 48 hours in ambient condition	After 7 days dry in ambient condition
EPS 2420	148%	78%
Competitor	170%	71%



EPS® 2430



Use: Primer, Topcoat, Self-Sealer

Market: Industrial Wood

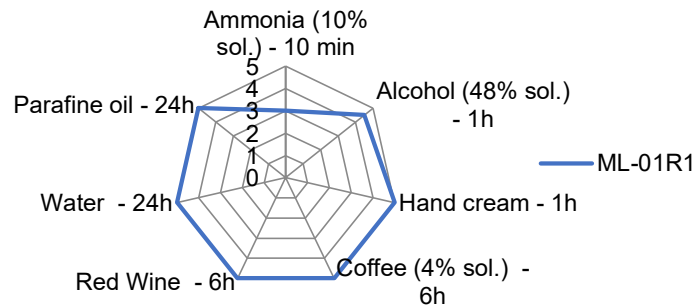
Leading 1K Acrylic Technology for High-End Topcoats & Self-Sealers

EPS 2430 is a self-crosslinking all-acrylic dispersion used as a binder for high quality wood coatings.

- In-can transparency
- Excellent chemical resistance
- Exceptional transparency and wood wetting (grain accentuation)
- Excellent mechanical properties
- Nitrocellulose-like appearance
- Good block resistance and hardness development
- Good hardness/flexibility ratio
- APE-free *

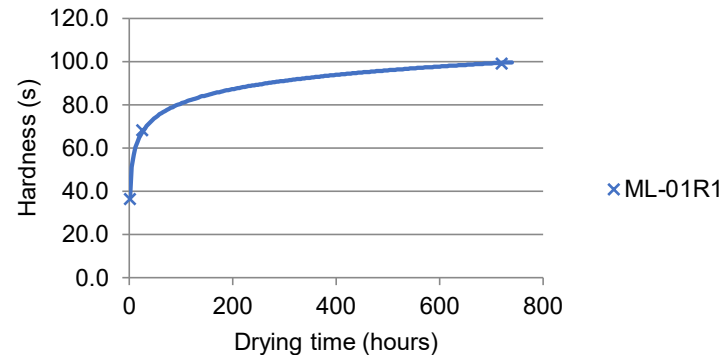
EPS® 2430

Chemical resistance to cold liquids
(1st layer 9.3 g/ft² wet on beech, 2nd layer 9.3 g/ft² wet - dry 3 w RT

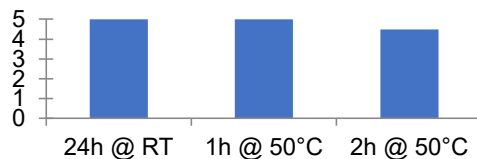


5 = no damage, 1 = coating failure.

Hardness Development (clear)

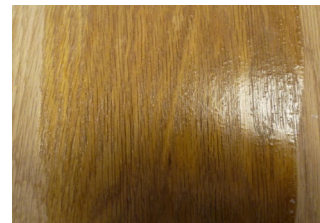


Block Resistance



5 = no damage,
1 = coating failure.
Pressure ~ 17 psi

NB: based on clear topcoat formulation



High Transparency and
Wood Wetting

- High Transparency
- Excellent wood wetting
- Suitable for a panorama of typical furniture woods



Use: Topcoat

Market: Industrial Wood

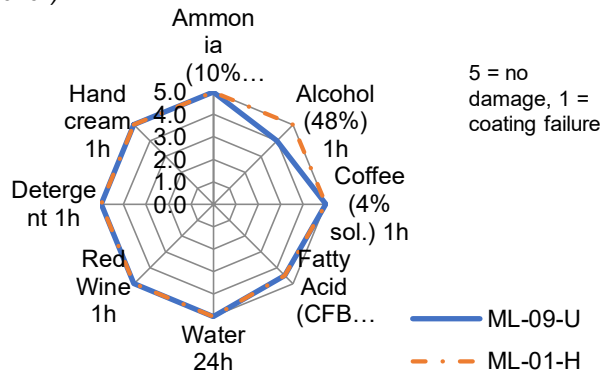
Self-Crosslinking Multiphase All-Acrylic Emulsion

EPS 2452 is used as the principal vehicle for white pigmented high-performance furniture and wood finishes where IKEA R2 (coffee and ethanol resistance) performance is necessary.

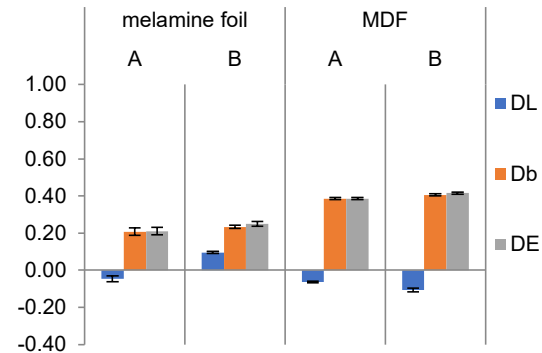
- Capable of meeting IKEA R2 specifications
- High block resistance
- Low solvent demand
- Good hardness development
- <100g/L VOC capable
- APE-free *

EPS® 2452

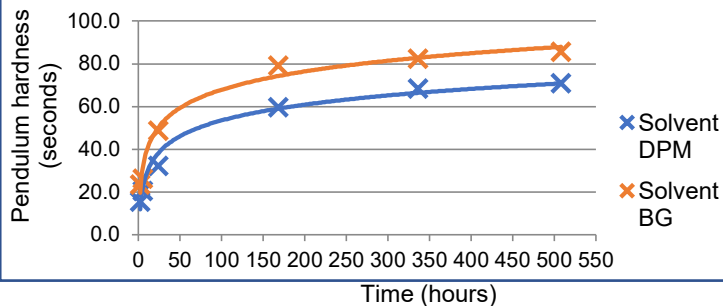
Chemical Resistance (based on white pigmented topcoat formulation on melamine foil)



White pigmented topcoat formulation - Coffee Resistance (1 hour - IKEA R2) *



Hardness Development (based on white pigmented topcoat formulation)



Block Resistance (based on white pigmented topcoat formulation)

Product	24h @ 25 °C	1h @ 50 °C
EPS 2452	5	5

5 = no damage, 1 = coating failure. Pressure ~ 28 psi

EPS® 2454



Use: Primer, Self-Sealer

Market: Industrial Wood, Flooring

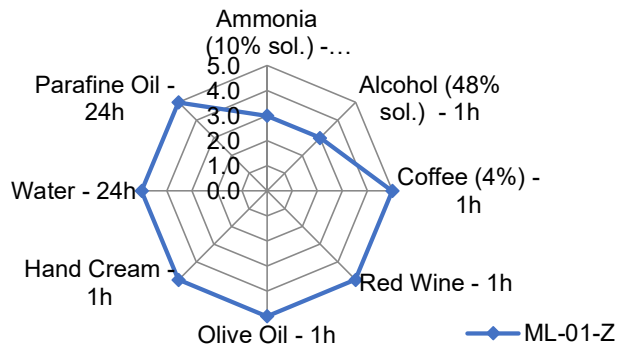
All-Acrylic Dispersion for High-Quality Wood Coatings

EPS 2454 is used as the principal vehicle for primers and self-sealers when high clarity, excellent penetration, and minimal grain raising is a must. The product has been specifically developed for oak to avoid undesired discoloration.

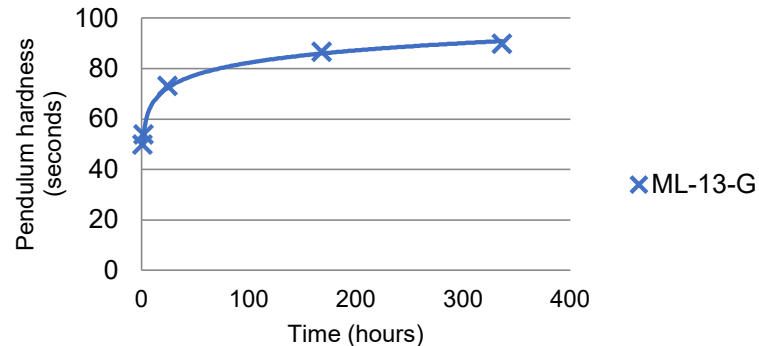
- Very good mechanical properties
- Good chemical resistance
- Outstanding transparency and wood wetting (grain accentuation)
- Good block resistance
- Low solvent demand
- High build (high solids)
- APE-free *

EPS® 2454

Chemical resistances (based on clear topcoat formulation, according to EN 12720)



Hardness Development (based on clear transparent primer formulation)



Top Anfeuerung and transparency (based on clear topcoat formulation)



- High clarity
- Outstanding transparency
- SB like Anfeuerung
- Designed for oak

Block Resistance (based on clear transparent primer formulation)

Product	1 hour (50°C)	24 hours (RT)
EPS 2454	5	5

5 = no damage, 1 = coating failure. Pressure ~ 28 psi

EPS® 2458



Use: Primer, Self-Sealer

Market: Industrial Wood

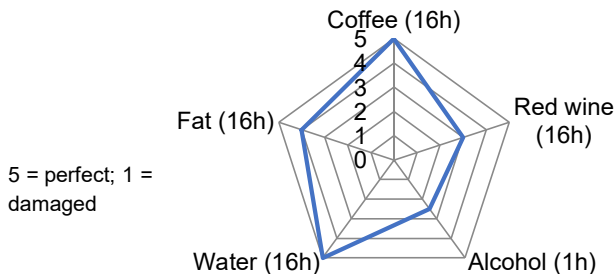
All-Acrylic Emulsion with Proven Performance in Primers & Self-Sealers

EPS 2458 is a water based, self-crosslinking all-acrylic emulsion binder for interior and exterior applications.

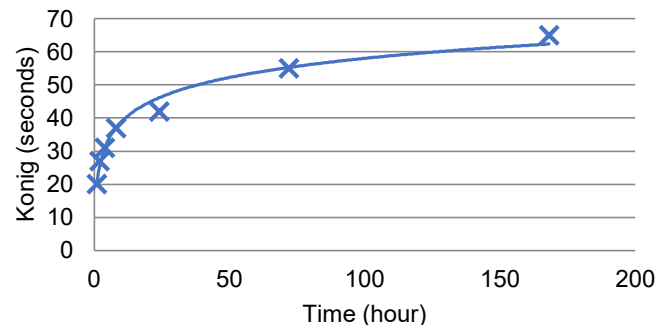
- Good balance between hardness and flexibility
- Fast dry
- Good chemical resistance
- Very good in-can transparency
- Very good wood wetting (grain accentuation)
- Good block resistance
- Very low solvent demand
- APE-free *

EPS[®] 2458

Chemical Resistance (after 7 days drying in ambient conditions, based on clear self-sealer formulation)



Hardness Development (~4 mil WFT on glass, based on clear self-sealer formulation)



Early Water Resistance (~ 4 mil WTF on black Leneta)

Product	Solvent (2%)	1 h	2 h	4 h
EPS 2458	BG	5	5	5

5 = no damage, 1 = blushing / blisters

Block Resistance (~ 4 mil WFT on black Leneta, based on clear self-sealer formulation)

Product	1 hours (RT)	24 hours (RT)
EPS 2458	4	5

5 = no damage, 1 = coating failure. Pressure ~ 28 psi

QUESTIONS

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The data in this presentation represent typical values. Because application variables are a major factor in product performance, this information should serve only as a general guide. EPS assumes no obligation or liability for the use of this information.