

# POLYTONE<sup>®</sup>

## AP Series/ALKYL PHENOL RESINS



**POLYOLS & POLYMERS PVT. LTD.**

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# POLYTONE®

## AP Series Alkyl Phenol Resins

 <b>ADHESIVE RESINS</b>	<ul style="list-style-type: none"><li>• POLYTONE® AP 108</li><li>• POLYTONE® AP 109/D/XD</li><li>• POLYTONE® AP 110/110XD</li><li>• POLYTONE® AP 111</li><li>• POLYTONE® AP 112/112XD</li><li>• POLYTONE® AP 114</li></ul>	 <b>CURING/VULCANISING</b>	<ul style="list-style-type: none"><li>• POLYTONE® AP 113</li><li>• POLYTONE® AP 113A</li></ul>	 <b>TACKIFIER RESINS</b>	<ul style="list-style-type: none"><li>• POLYTONE® AP 120</li><li>• POLYTONE® AP 121</li><li>• POLYTONE® AP 122</li></ul>	 <b>REINFORCE/CROSSLINK</b>	<ul style="list-style-type: none"><li>• POLYTONE® AP 130</li><li>• POLYTONE® AP 131</li><li>• POLYTONE® AP 132</li><li>• POLYTONE® AP 133</li></ul>
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With more than 15 Grades in POLYTONE® AP Series, we offer resins to a wide spectrum of Industries like Rubber Adhesives, Shoe Adhesives, Upholstery Adhesives, Automotive Adhesives, Paints, Varnishes and Lacquers, Tyre/Tire Building, Conveyor Belting, Shoe soles, Tire Beads and many more.

The premium grade synthetic resin offered by us has received wide acceptance all across the world, especially in European markets, North east African countries, South African countries, South Eastern Asia and South America. About 75% of our entire products range and more than 95% of our POLYTONE® AP Series Alkyl Phenol Resins are exported, majorly to European countries.

We are a trusted name and offer only quality range of synthetic resin to our clients. Owing to our professional approach, quality products and services, we have become the most preferred choice of our clients.

## PHENOLIC RESIN FOR ADHESIVE

### Type

- Heat Reactive/Reactive
- Thermosetting

### Chemistry

- Alkylphenol Formaldehyde
- PTBP Formaldehyde
- PTBP Resin
- Toluene Free

### Phenolic Resin Type

- Resol

POLYTONE® AP Series Phenolic Resin are oil-soluble, heat-reactive phenolic resin developed for formulating non-phasing polychloroprene solvent-type contact adhesives.

Wide range of these resins impart properties like *high heat resistance, cohesive strength, long or short open time/green Time, high or low Tack, quick or slow drying.*

Added feature of colour choices – *Light Yellow, Amber, Honey and Dark Violet* increases potential product variations.

Incorporation of these resins in polychloroprene adhesive formulation provides excellent static and dynamic strength properties.

## APPLICATIONS

- Application available are broad, apart from usual poly chloroprene adhesive, application areas include shoe, automotive, aircraft, furniture, building. Added feature of high heat resistance, high cohesive strength and color options further increases the number of potential uses.
- It can be used as base resin and also as modifying resin. Can be mixed directly into solvent to make a solution or can be milled with rubber stock.
- Because of its reactivity, adhesion properties and heat resistant it has also found application in varnishes, insulation coatings, printing inks.
- Can be used in formulation of hard ink resins and coating with chemical resistance.
- In formulation of medium & long oil exterior and interior varnishes and spar varnishes for deck and floor.

SPECIALITY GRADES				
	POLYTONE® AP 108	POLYTONE® AP 109 AP 109D AP 109 XD	POLYTONE® AP 110 AP 110 XD	POLYTONE® AP 111
<b>Colour</b>	Pale Yellow	Pale Yellow/ Honey Color(109D)	Pale Yellow	Pale Yellow
<b>Softening Point (Ball &amp; Ring)</b>	110 – 125 °C	95 – 110 °C	110 – 120 °C	-
<b>Melting Point (Capillary)</b>	75 – 90 °C	-	-	70 – 80 °C
<b>Viscosity (B4 Ford Cup @ 30°C)</b>	80 – 130 Sec (60% Sol <sup>n</sup> in Toluene)	35 – 70 Sec (60% Sol <sup>n</sup> in Toluene)	35 – 75 Sec (60% Sol <sup>n</sup> in Toluene)	-
<b>Methylol Content</b>	8 – 13 %	10 – 14 %	10 – 14 %	14 – 18 %
<b>Moisture Content</b>	≤ 0.5 %	≤ 0.5 %	≤ 0.5 %	≤ 0.5 %
<b>Characteristics</b>	<ul style="list-style-type: none"> <li>✓ High Heat Resistance</li> <li>✓ Non Phasing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Excellent Green Tack</li> <li>✓ Medium Open Time</li> <li>✓ Light Color</li> <li>✓ Toluene Free Grade Available 109 XD</li> </ul>	<ul style="list-style-type: none"> <li>✓ Good Heat Resistance</li> <li>✓ Average Open Time</li> <li>✓ Storage Stability</li> <li>✓ Toluene Free Grade Available 110 XD</li> </ul>	<ul style="list-style-type: none"> <li>✓ Extends Open/Tack Time</li> <li>✓ Increase Cohesive Strength</li> <li>✓ Specific Adhesion to Glass/Metal</li> <li>✓ High Reactivity</li> </ul>

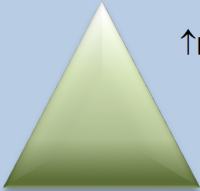
\* Test methods available on request

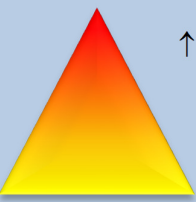
GENERAL PURPOSE GRADES			
	POLYTONE® AP 112	POLYTONE® AP 112 XD	POLYTONE® AP 114
<b>Colour</b>	Pale Yellow	Yellow to Reddish Brown	Dark Violet
<b>Softening Point (Ball &amp; Ring)</b>	83 – 95 °C	-	88 – 102 °C
<b>Melting Point (Capillary)</b>	60 – 70 °C	60 – 70 °C	70 – 80 °C
<b>Viscosity (B4 Ford Cup @ 30°C)</b>	-	-	-
<b>Methylol Content</b>	10 – 13 %	8 – 12 %	10 – 14 %
<b>Moisture Content</b>	≤ 0.5 %	≤ 0.5 %	≤ 0.5 %
<b>Characteristics</b>	<ul style="list-style-type: none"> <li>✓ General Purpose</li> <li>✓ Longest Tack/Green Time</li> <li>✓ Light Color</li> </ul>	<ul style="list-style-type: none"> <li>✓ Toluene Free</li> <li>✓ Long Green/Open Time</li> </ul>	<ul style="list-style-type: none"> <li>✓ Dark Colour</li> <li>✓ Long Green/Open Time</li> </ul>

\* Test methods available on request

SOLUBILITY	
	POLYTONE® AP 108/109D/109XD/110/ 110XD/111/112/ 112XD/114
Alcohols	●
Higher Alcohols	●
Esters <i>Ethyl Acetate</i>	●
Ketones <i>MEK</i>	●
Esters	●
Aromatic Hydrocarbons <i>Toluene</i>	●
Aliphatic Hydrocarbons <i>Petro. Distillate 60/95</i> <i>Petro. Distillate 80/110</i>	●
Chlorinated Hydrocarbons	●
Mineral Oil <i>White Spirit</i> <i>MTO</i>	●
Water	⊘
<ul style="list-style-type: none"> <li>● Soluble</li> <li>● Limited Solubility</li> <li>⊘ Insoluble</li> </ul>	

COMPATIBILITY ( <i>Parts by Weight</i> )	
	POLYTONE® AP 108/109D/109XD/110/110X D/111/112/ 112XD/114
100% by weight of:	
Polychloroprene/ Neoprene	●●●●●
Nitrile Rubber/NBR	●●●●●
NBR + Acrylonitrile (ACN)	●●
Styrene Butadiene Rubber SBR	●●
Natural Rubber	●●
Reclaimed Rubber	●●
Acrylonitrile	●●
<i>Fully Compatible – 100%</i> : ●●●●● <i>Compatible up to 25%</i> : ●● <i>Not Compatible-0%</i> : ⊘	

OPEN TIME/TACK TIME/GREEN TIME	
POLYTONE AP 108	 ↑LOW
POLYTONE AP 110	
POLYTONE AP 109	
POLYTONE AP 111	
POLYTONE AP 112/114	

HEAT RESISTANCE	
POLYTONE AP 108	 ↑HIGH
POLYTONE AP 110	
POLYTONE AP 109	
POLYTONE AP 111	
POLYTONE AP 112/114	

Open time & Heat resistance are inversely related. Heat Resistance can be increase only a cost of compromising open time. It is possible to blend multiple grades in varying proportions to impart the desired property to the formulation.

## SUGGESTED FORMULATIONS

### ● POLYCHLOROPRENE ADHESIVE/CONTACT CEMENTS

POLYTONE® AP Series (108/109/110/111/112/114) is particularly suitable for the manufacture of polychloroprene adhesives for the footwear, building, furniture and automobile industries.

POLYTONE® AP 108/109/110 will give the adhesive high heat resistance and initial strength.

POLYTONE® AP 111 shall provide good bond strength and adhesion to glass and metal substrates.

POLYTONE® AP 112/114 is used when higher open time/green time is needed.

PART A – Parts by Weight	
Neoprene AC3	100
Zinc Oxide	5
Magnesium Oxide	4
Antioxidant	2
Solvent	333
<b>Mill all compounding ingredients into rubber base and dissolve base in organic solvent</b>	

PART B – Parts by Weight	
POLYTONE® AP 108/109/110/111/112/114	45
Magnesium Oxide	4.5
Water	2
Solvent	47.5
Add POLYTONE AP Resin and magnesium oxide to the solvent and agitate for at least 3 hours and preferably 15 hours.	

PART C
Combine Parts A and B. NOTE: To increase open tack time, 11 parts of POLYTONE® AP Resin 112 can be added to Part B in the above formula.

### ● HIGH PERFORMANCE COATINGS/WIRE ENAMELS

Addition of high heat resistance POLYTONE® AP 108/109/110 substantially increases adhesion to substrate. It helps lower initial viscosity and hence improves flow ability of formulation.

Solvent	100 Parts
Polyester Polyester Imide Polyamide Imide	25 – 35 Part
Stabilizer	1-2 Parts
Anti oxidant	1-2 Parts
POLYTONE AP 108/109/110	4-5 Parts



#### STORAGE & HANDLING

Available in 25Kg HDPE Line KRAFT Paper Bags with Anti Static Liner or 25Kg HDPE Bags  
Choice of ISPM 15 Standard Heat Treated/Fumigated Pallets or Plastic Pallets.

Individual pallets must NOT be double stacked – pastilles/lumps are likely to agglutinate.  
Properties are not affected by agglutination

Can be stored up to 12 months at temperatures below 35 °C.

#### SAFETY

Please follow advice and information provided in MSDS. Protective clothing & workplace hygiene measure must be observed at all times.

Detailed MSDS available on request.

#### CONTACT US

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