Eastman CP 730-1 chlorinated polyolefin adhesion promoter

(20% solids in aromatic 100 or xylene)

Eastman CP 730-1 is a chlorinated polyolefin adhesion promoter supplied at 20% solids in either Aromatic 100 or xylene. CP 730-1 can be used as an adhesion promoter for polypropylene (PP), thermoplastic olefin (TPO), or other polypropylene-based substrates. It shows excellent gasoline and humidity resistance under both 1-part melamine and 2-part urethane-based topcoats.

Typical properties[a]

% Solids	20.0
% Chlorine	22.5
Gardner color	4
Haze (mL/g-cm at 700 nm)	1
Wt/vol	7.54 lb/gal

[a]*Properties reported here are typical of average lots. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.*

Solubility

Eastman CP 730-1 is soluble in aromatic hydrocarbon solvents such as xylene, toluene, and Aromatic 100. Cyclic hydrocarbon solvents such as methylcyclohexane and ethylcyclohexane can be used to dilute CP 730-1. It is not soluble in aliphatic hydrocarbons, esters, ketones, or alcohols but can be diluted, as supplied, with some long-chained ketones and esters, such as methyl amyl ketone and *n*-butyl propionate. When diluting CP 730-1 with long-chained ketones and esters, the solutions may appear hazy. This haze does not appear to affect the product's ability to promote adhesion to PP or TPO.

Compatibility

Table 1 shows the compatibility of Eastman CP 730-1, which is similar to Eastman CP 343-1. For more information on CP 343-1, see Eastman publication GN-424.

Table 1 Compatibility of Eastman CP 730-1

Sample #	Duramac™ HS 207-2706[a]	Polymac™ HS 057-5776[a]	Polymac™ HS 220-2010[a]	Polymac™ HS 057-5789[a]	Desmophen™ 67A 80[b]	Paraloid™ AU608X[c]	Acrylamac™ 232-1700[a]	Xylene	Eastman CP 730-1 (20% in A-100)[d]	9:1	1:1	Ambient conditions	Heated @ 60°C (1 h)[e]	Rating[f]
1	6.26	—	—	—	—	—	—	68.8	25.0	—	•	•	—	H
2	11.26	—	—	—	—	—	—	83.8	5.0	•	—	•	—	I
3	6.26	—	—	—	—	—	—	68.8	25.0	—	•	—	•	I
4	11.26	—	—	—	—	—	—	83.8	5.0	•	—	—	•	I
5	—	5.88	—	—	—	—	—	69.2	25.0	—	•	•	—	C
6	—	10.58	—	—	—	—	—	84.4	5.0	•	—	•	—	C
7	—	5.88	—	—	—	—	—	69.2	25.0	—	•	—	•	C
8	—	10.58	—	—	—	—	—	84.4	5.0	•	—	—	•	C
9	—	—	6.66	—	—	—	—	68.4	25.0	—	•	•	—	SH
10	—	—	12.00	—	—	—	—	83.0	5.0	•	—	•	—	SH
11	—	—	6.66	—	—	—	—	68.4	25.0	—	•	—	•	SH
12	—	—	12.00	—	—	—	—	83.0	5.0	•	—	—	•	SH
13	—	—	—	5.88	—	—	—	69.2	25.0	—	•	•	—	C
14	—	—	—	10.58	—	—	—	84.4	5.0	•	—	•	—	C
15	—	—	—	5.88	—	—	—	69.2	25.0	—	•	—	•	C
16	—	—	—	10.58	—	—	—	84.4	5.0	•	—	—	•	C
21	—	—	—	—	6.26	—	—	68.8	25.0	—	•	•	—	I
22	—	—	—	—	11.26	—	—	83.8	5.0	•	—	•	—	I
23	—	—	—	—	6.26	—	—	68.8	25.0	—	•	—	•	I
24	—	—	—	—	11.26	—	—	83.8	5.0	•	—	—	•	I
25	—	—	—	—	—	8.34	—	66.6	25.0	—	•	•	—	I
26	—	—	—	—	—	15.00	—	80.0	5.0	•	—	•	—	I
27	—	—	—	—	—	8.34	—	66.6	25.0	—	•	—	•	I
28	—	—	—	—	—	15.00	—	80.0	5.0	•	—	—	•	I
29	—	—	—	—	—	—	8.34	66.6	25.0	—	•	•	—	I
30	—	—	—	—	—	—	15.00	80.0	5.0	•	—	•	—	H
31	—	—	—	—	—	—	8.34	66.6	25.0	—	•	—	•	I
32	—	—	—	—	—	—	15.00	80.0	5.0	•	—	—	•	H

[a] *Resin supplied by PCCR.*

[b] *Resin supplied by Bayer.*

[c] *Resin supplied by DOW Chemical.*

[d] *CPO used was Eastman CP 730-1 20% solids in Aromatic 100.*

[e] *Samples were heated at 60°C for 1 hour and evaluated the next day.*

[f] *Ratings for solutions: C = compatible; I = incompatible; H = hazy; SH = slightly hazy.*

How to use

Eastman CP 730-1 is an adhesion-promoting resin that can be used as a primer for polypropylene-based substrates. When used in primer applications, it can be used alone, or in some cases, it can be formulated with other resins to make up the adhesion-promoting primer. CP 730-1 may also be used as an additive in coatings, inks, or adhesives to improve adhesion to polypropylene-based substrates. When using CP 730-1 as an additive, its compatibility with the coating, ink, or adhesive will need to be determined before use. Brief descriptions for primer and additive applications follow:

Primer applications

- Clean substrate with isopropyl alcohol.
- Prepare Eastman CP 730-1 primers at 5%–10% solids and apply to the substrate at a thickness of 0.1–0.3 mils (2.5–7.5 µ).
- Primer may be air dried or heated at 80°C for approximately 10 minutes.
- Topcoats can be applied as soon as the primer has been dried.

Additive applications

- Clean substrate with isopropyl alcohol.
- Add 5%–15% Eastman CP 730-1, based on resin solids, to the coating, ink, or adhesive and mix thoroughly.
- Test for compatibility or effect on dry film properties.
- If adequate adhesion is not obtained, increase the amount of Eastman CP 730-1 until adhesion is obtained. Monitor any effects the addition of more CP 730-1 has on dry film properties.

Performance as a primer

Table 2 **Percent retained adhesion of various automotive OEM topcoats on Sequel™ 1440 TPO after exposure to Cleveland humidity (ASTM D4585 at 58°C)**

Topcoat	Coating bake temperature, °C	Time, h	% Retained adhesion
1K/1K[a]	120	504	100
1K/2K[b]	120	504	100
2K/2K[c]	80	504	100

[a]1K/1K = 1-part melamine-cured basecoat/1-part melamine-cured clearcoat.

[b]1K/2K = 1-part melamine-cured basecoat/2-part polyurethane-cured clearcoat.

[c]2K/2K = 2-part polyurethane-cured basecoat/2-part polyurethane-cured clearcoat

Table 3 **Gasoline resistance (GM 9501P Method B) on Sequel™ 1440 TPO**

Topcoat	Coating bake temperature, °C	Time, h	% Adhesion/ % lifted
1K/1K[a] (silver)	120	1	100/11
1K/1K[a] (white)	120	1	100/22
1K/1K[a] (white)	120	1	100/23

[a]1K/1K = 1-part melamine-cured basecoat/1-part melamine-cured clearcoat.

Table 4 **Gasoline resistance (Ford modified Juntunen) on Sequel™ 1440 TPO**

Topcoat	Coating bake temperature, °C	Time, h	% Adhesion/ % lifted
1K/1K[a] (silver)	120	1	100/0; edge
1K/2K[b] (blue)	120	1	98/0; edge
2K/2K[c] (white)	80	1	91/0; edge

[a]1K/1K = 1-part melamine-cured basecoat/1-part melamine-cured clearcoat.

[b]1K/2K = 1-part melamine-cured basecoat/2-part polyurethane-cured clearcoat.

[c]2K/2K = 2-part polyurethane-cured basecoat/2-part polyurethane-cured clearcoat.

Storage and handling

Solutions of Eastman CP 730-1 may partially settle over time. Should these conditions occur, warming the contents to approximately 38°–49°C with mild agitation while keeping away from sparks and open flames will generally return the product to its original condition. Warning, static electricity can build up when handling or mixing nonpolar solvents such as Aromatic 100, xylene, or toluene—users should take appropriate precautions to eliminate static electricity build up. Before using or handling products from Eastman or any other suppliers, users should review all applicable safety information including Safety Data Sheets (SDS).

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