



RHOPLEX™ I-545 Emulsion

Regional Product Availability

- North America

Description

RHOPLEX™ I-545 Emulsion is a versatile all-acrylic aqueous vehicle suitable for overprint varnishes and letdowns for flexographic and gravure ink applications. It is a hard film former that offers a distinct combination of properties - good gloss, heat resistance and water resistance with fast drying speed. On press, RHOPLEX I-545 Emulsion has excellent transfer and printability with good resolubility for ease of clean-up.

Key Features

As an Overprint:

- Scuff resistance
- High inherent COF
- Good heat resistance, can be modified with zinc crosslinkers to enhance heat resistance
- Excellent clarity
- Good gloss
- Good water resistance

As a Letdown Vehicle:

- With aluminum paste pigments for good stability
- Good solvent compatibility for flexo and gravure ink formulations

Typical Physical Properties

(These properties are typical but do not constitute specifications.)

Property	Value
Appearance	Milky white emulsion
Solids, %	40.0
pH	8.5
Viscosity, cP	400 - 1500
Tg, °C	65
Acid number	75
Molecular weight	>200,000
Freeze/thaw stability	Yes, 5 cycles
VOC	No

Compatibility Guidelines

Solvent Compatibility with RHOPLEX™ I-545 Emulsion

RHOPLEX I-545 Emulsion is compatible with the typical alcohols and glycol ether solvents utilized in the graphic arts industry.

Compatibility with Other Polymers

RHOPLEX I-545 Emulsion is compatible with the standard styrene/acrylics that are used in the graphic arts industry.

Typical Starting
Point
Formulations

Application: Overprint Varnish

	Scuff	Non-skid
RHOPLEX™ I-545 Emulsion	85.2	75.0
LUCIDENE™ 604 Emulsion	-	15.0
Water	9.6	5.0
Flexonic 600 ¹ polyethylene wax dispersion	5.0	-
Luciwax 37 emulsion	-	5.0
Patcote 811 ² defoamer	0.2	0.2
Total	100.0	100.0
TS, %	36.0	38.7
Viscosity, #2 Zahn cup, sec.	25-30	40
Static Slide Angle	21	35
Kinetic Slide Angle	10	20
Sutherland rub resistance	Pass 500 cycles	Pass 500 cycles

¹ Flexonic 600 polyethylene wax dispersion supplied by and a trademark of Lawter

² Patcote 811 defoamer supplied by and a trademark of Patco

Application: Heat Resistant Overprint Varnish

RHOPLEX™ I-545 Emulsion	82.0	41.0
RHOPLEX I-2183N	-	41.0
Water	7.3	12.8
Zinplex 15 ³ zinc ammonium carbonate complex	5.5	-
Luciwax 37 emulsion	5.0	5.0
PI-209 ³ defoamer	0.2	0.2
Total	100.0	100.0
TS, %	35.3	30.5
Viscosity, #2 Zahn cup, sec.	30-40	30-40
Heat resistance	Pass	Pass

³ Zinplex 153 zinc ammonium carbonate complex supplied by and a trademark of Ultra Additives

³ PI-209 defoamer supplied by and a trademark of Ultra Additives

Application: Gloss and Offset Overprint Varnish

RHOPLEX™ I-545 Emulsion	71.0	80.3
RHOPLEX I-3000 (30%)	24.0	-
Water	-	10.0
Luciwax 37 emulsion	4.8	5.0
Isopropanol	-	3.0
Surfynol 104H ⁴ acetylenic diol surface active agent	-	1.5
Defoamer	0.2	0.2
Total	100.0	100.0
TS, %	39.2	35.0
Viscosity, #2 Zahn cup, sec.	60	40

⁴ Surfynol 104H acetylenic diol surface active agent supplied by and a trademark of Air Products

Typical Starting Point Formulations (cont.)

Application: Metallic Inks Based on Aluminum Pigments

Premix and add:

RHOPLEX™ I-2074 Emulsion	75.0
Water	15.0
Ammonia Hydroxide	5.0
Add under moderate shear conditions:	
RHOPLEX I-545	5.0
Stapa Hydrolac W-60 n.l. ⁵ Aluminium pigment paste	0.2
Total	100.0
TS, %	38.7
Viscosity, #2 Zahn cup, sec.	40

Avoid extreme grinding to expose pigment surfaces that can produce gassing. Best results if allowed to equilibrate for 24 hrs. before use.

⁵ Stapa Hydrolac W-60 n.l. Aluminium pigment paste supplied by and a trademark of Obron

Food Legislation

FDA Regulation	Complies	Limitations	Opinion Date
21CFR175.105 (Adhesives)	Yes		08Jan13
21CFR176.170 (Components of paper and paperboard in contact with aqueous and fatty foods)	Yes with Limitations	▪ PROVIDED THAT THE FOOD CONTACT SURFACE OF THE PAPER AND PAPERBOARD COMPLIES WITH THE EXTRACTIVES LIMITATIONS IN 21CFR176.170 PARAGRAPH (C).	08Jan13
21CFR176.180 (Components of paper and paperboard in contact with dry food)	Yes		08Jan13

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