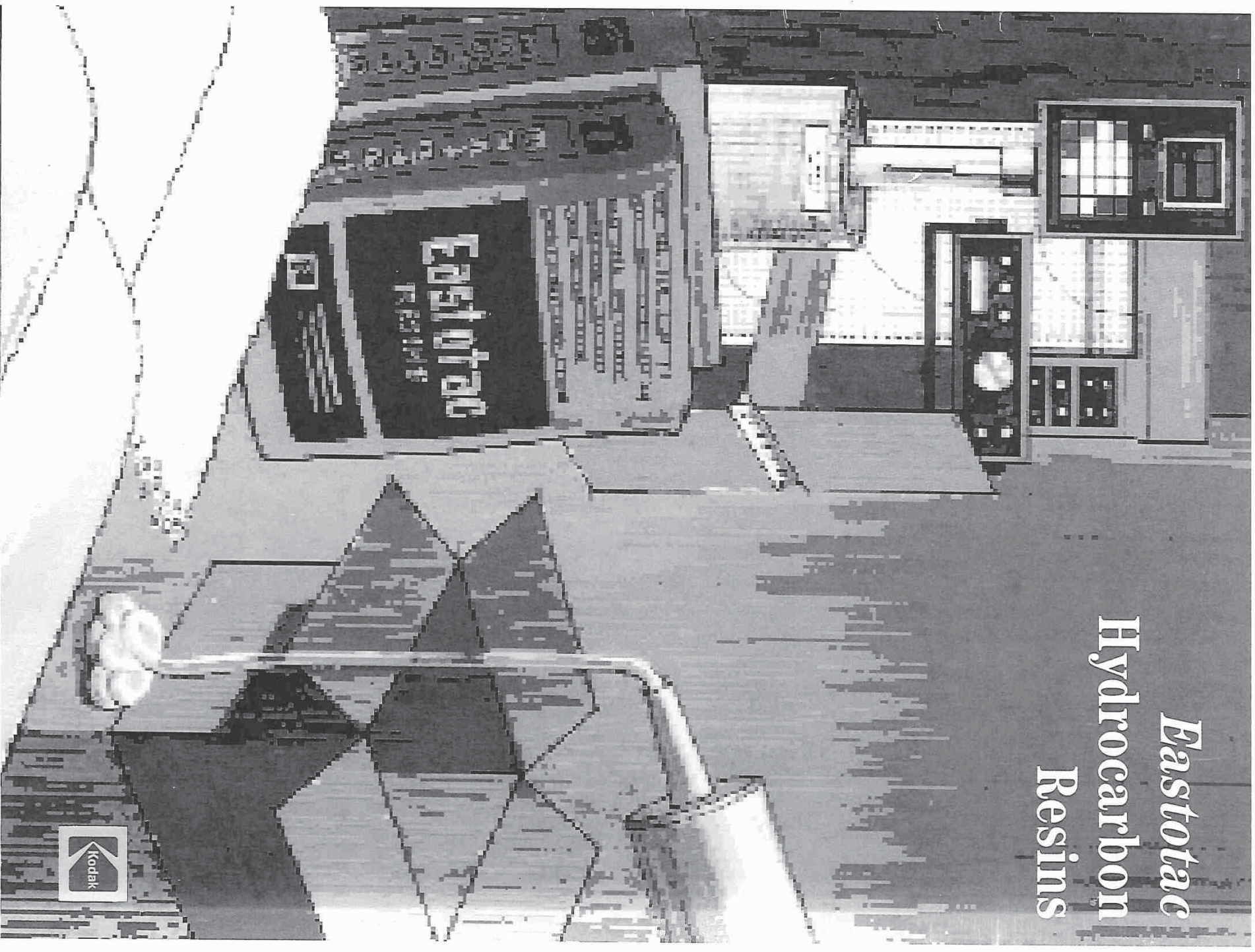


Eastotac Hydrocarbon Resins



Eastotac
Hydrocarbon
Resins

Introduction

Eastotac resins are hydrogenated, C₅ aliphatic hydrocarbon tackifying resins. They are characterized by low odor, good solubility, excellent heat stability, and low color. These products also exhibit good tackifying characteristics and broad compatibility with numerous elastomers, polymers, and other resins.

Eastotac hydrocarbon resins are produced from petroleum feedstock by polymerization followed by hydrogenation. Production of the resin with the desired softening point is obtained by controlling the polymerization process. These hydrocarbon resins are essentially fully saturated. As a result, they have good color, heat stability, and aging properties that can carry through to the final product in which they are used.

Eastotac resins are available in four color levels with varying softening points which allow the selection of the resin most suitable for a particular application. Typical physical properties and color grades of these resins are listed in Table 1. Solubility characteristics are shown in Table 2 and compatibility can be found in Table 4.

Applications

Eastotac resins find application as tackifying resins for pressure-sensitive adhesives, hot melt adhesives, caulks, and sealants. These resins are especially suited for low-molecular-weight polyethylene-based hot melt adhesives where elevated temperature resistance and high cohesive strength are required. In ethylene-vinyl acetate-based hot melts, *Eastotac* resins provide for good flexibility and low temperature properties important for applications such as bookbinding and frozen food cartons. They are also effective tackifiers for amorphous polyolefins suitable for laminating, product assembly, and applications where substrates are particularly difficult to bond.

Used as components in hot melt adhesives, *Eastotac* resins provide improved surface wetting and lower viscosities at elevated temperatures for compositions based on low-molecular-weight polyethylene waxes, amorphous polyolefins, or ethylene-vinyl acetate copolymers. General composition ranges in hot melt adhesives are given in Table 3.

In caulks and sealants, *Eastotac* resins are effective tackifiers for a broad range of elastomers including block copolymers and butyl rubbers. The good UV and oxidative stability imparts outstanding weatherability. Being soluble in most aromatic and aliphatic hydrocarbon solvents makes these resins useful with various solvent-based systems. In clear

Tak

Typical Properties of *East*

PROPERTY	H-100E	H-100R	H-100L	H-100W	H-115E
Ring & Ball Softening Point, °C (°F)	100 (212)	100 (212)	100 (212)	100 (212)	115 (239)
Physical Form	Flake	Flake	Flake	Flake	Flake
Gardner Color (Molten)	8	4	2	<1	8
Gardner Color (in 50% Toluene)	6	2	<1	<1	6
Acid Number	<0.1	<0.1	<0.1	<0.1	<0.1
Density	1.04	1.04	1.04	1.04	1.04
Viscosity, <i>Brookfield Thermoseal</i> , 190°C (374°F), cP	200	200	200	200	400
Bromine Number	15	5	3	1	15
Chlorides, total, ppm	<10	<10	<10	<10	<10
Ash, %	<0.002	<0.002	<0.002	<0.002	<0.002
Flash Point, Cleveland Open Cup, °C (°F)	242 (468)	242 (468)	242 (468)	242 (468)	257 (495)
Fire Point, Cleveland Open Cup, °C (°F)	266 (510)	266 (510)	266 (510)	266 (510)	283 (542)

* Reported for information only. Eastman makes no representation that the material in any particular shipment will conform exactly to the values given.

sealants or adhesives where very low color is a requirement, “W” grade resins are suggested.

Other applications for *Eastotac* hydrocarbon resins include: tackifiers and processing aids for various rubber systems; additives for certain types of inks, paints, and varnishes; textile sizes in dry-cleaning solutions; and base polymers for investment casting and highway marking. Also, these resins can be coemulsified with *Epolene* E polyethylene waxes.

All *Eastotac* resins are manufactured in Longview, Texas, in state-of-the-art manufacturing facilities which provide for very consistent and high-quality products.

Packaging

For your handling and storage convenience, the standard package for *Eastotac* hydrocarbon resins is a 50-pound (22.7-kg) multiwall paper bag. Samples (2 pounds) are available for your evaluation.

FDA Status

In the United States, *Eastotac* hydrocarbon resins are lawful for use in food packaging adhesives under Food Additive Regulation 21 CFR 175.105, subject to the limitations contained in that regulation. In other countries, consult the appropriate government regulatory agency concerning this use.

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tac Hydrocarbon Resins*

H-115R	H-115L	H-115W	H-130E	H-130R	H-130L	H-130W	H-142R
115	115	115	130	130	130	130	142
Flake	Flake	Flake	Flake	Flake	Flake	Flake	Flake
4	2	<1	8	4	2	<1	4
2	<1	<1	6	2	<1	<1	2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
400	400	400	1200	1200	1200	1200	3000
5	3	1	15	5	3	1	5
<10	<10	<10	<10	<10	<10	<10	<10
<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001
257 (495)	257 (495)	257 (495)	299 (570)	299 (570)	299 (570)	299 (570)	321 (610)
283 (542)	283 (542)	283 (542)	325 (617)	325 (617)	325 (617)	325 (617)	335 (635)

Table 2

**Solubility Characteristics of *Eastotac*
Hydrocarbon Resins
(1:3 Hydrocarbon Resin:Solvent Ratio, 25°C)**

Solvent	Solubility
Acetone	Slightly soluble
Chloroform	Soluble
Ethyl alcohol	Insoluble
Heptane	Soluble
Hexane	Soluble
Isopropyl alcohol	Slightly soluble
Methylene chloride	Soluble
Methyl ethyl ketone	Slightly soluble
Perchloroethylene	Soluble
Toluene	Soluble
1,1,1-Trichloroethane	Soluble
Xylene	Soluble

**Table 3
General Composition Ranges for *Eastotac* Resins
in Hot Melt Adhesives**

Materials	Compositions, % by Weight		
	PE Base	APP Base	EVA Base
<i>Eastotac</i> resin	10-40	30-50	30-60
Low-molecular-weight polyethylene wax	60-90	0-20	—
Amorphous polyolefin	—	50-70	—
Ethylene-vinyl acetate copolymer	—	—	30-50
Petroleum wax or Fischer-Tropsch wax	—	—	0-20
Antioxidant	0.25-0.5	0.25-0.5	0.25-0.5

Table 4
Compatibility of Eastotac Resins With Other Products

Product	Material	Supplier	Compatibility* (Eastotac Resin:Material)		
			3:1	1:1	1:3
Carbowax 1540	Polyethylene glycol	Union Carbide Corporation	I	I	I
Cellulose acetate E-398-10	Cellulose acetate	Eastman	I	I	I
Ethyl cellulose	—	Hercules Incorporated	I	I	I
Emery 3796-R	Polyamide resin	Emery Industries, Inc.	PC	I	I
Elvax 150	Ethylene-vinyl acetate copolymer	E. I. du Pont de Nemours & Co., Inc.	I**	I**	C
Elvax 220	Ethylene-vinyl acetate copolymer	E. I. du Pont de Nemours & Co., Inc.	C	C	C
Elvax 420	Ethylene-vinyl acetate copolymer	E. I. du Pont de Nemours & Co., Inc.	C	C	C
Epoelene C-10	Polyethylene polymer	Eastman	C	C	C
Kodaflex DOP plasticizer	Diocyl phthalate	Eastman	C	C	C
Microcrystalline wax	—	Astrowax Corporation	C	C	C
Nirez 1135	Polyterpene resin	Arizona Chemical	C	C	C
Paraffin	Petroleum wax	Astrowax Corporation	C	C	C
Vinyville AYAC	Polyvinyl acetate	Union Carbide Corporation	PC	PC	PC
Vistanex LM-MH	Polysobutylene	Exxon Chemical Company	C	C	C
Wing-Tack 95	Hydrocarbon resin	Goodyear Tire & Rubber Co.	C	C	C
Staybelite ester 10	Wood rosin ester	Hercules Incorporated	C	C	C
Natural rubber	—	—	C	C	C
Natsyn 2200	Synthetic isoprene	Goodyear Tire & Rubber Co.	C	C	C
SBR rubber	Styrene-butadiene	B. F. Goodrich	C	C	C
Butyl rubber	—	Polysar, Inc.	C	C	C
Indopol H-1500	Polybutene	Amoco Chemicals Corporation	C	C	C
Kraton 1102	SBS block copolymer	Shell Chemical Company	C	C	C
Kraton 1107	SIS block copolymer	Shell Chemical Company	C	C	C
Kraton G 1652	SEBS block copolymer	Shell Chemical Company	C	C	C

* C = Compatible, PC = Partially Compatible (hazy), I = Incompatible.

** A mixture of 35% Elvax 150, 20% 140° paraffin, and 45% Eastotac hydrocarbon resin is compatible.



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Eastotac hydrocarbon resins contact:*

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