AROCLOR®
PLASTICIZERS

A series of inert, chemically-resistant, fire-retarding plasticizers compatible with wide variety of resins.

PLASTICIZERS



"Nothing contained herein is to be construed as a recommendation to use any product in conflict with any patent. MONSANTO MAKES NO WARRANTIES AS TO THE FITNESS OR MERCHANTABILITY OF ANY PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon information or recommendations, and disclaims all liability for any resulting loss or damage."

Organic Chemicals Division / 800 N. Lindbergh Blvd. / St. Louis, Missouri 63166

MONS 078749

AROCLOR PLASTICIZERS

A series of inert, chemically resistant, fire retarding plasticizers compatible with a wide variety of resins.

MONS 078750

Properties as Plasticizers

The Aroclor resins/plasticizers and their blends have a very unusual set of properties which make them extremely useful products. Their most important characteristics are:

Low Cost
Highly Compatible
Chemically Stable
Fire Retardant
Excellent Adhesion

Another very useful aspect of this product line is the fact that a continuous range of properties can be achieved by using combinations of the Aroclors and their blends. Some of the physical properties which can be controlled through product selection are shown on the following pages.

Key to Nomenclature

5400 Series

These products are chlorinated terphenyls. The last two digits indicate the chlorine content of the material, e.g., Aroclor 5460 is a chlorinated terphenyl with 60 percent chlorine. Undistilled Aroclors are available and are designated by a 5000 series vs. the 5400 series. They are somewhat higher in color but otherwise have product characteristics similar to the distilled products.

6000 Series

These products are blends of Aroclor 5460 and Aroclor 1221, a biodegradable mono chlorinated biphenyl. The last two digits indicate the percentage of Aroclor 5460 in the blend, e.g., Aroclor 6062 is a blend containing 62 percent Aroclor 5460 and 38 percent mono chlorinated biphenyl.

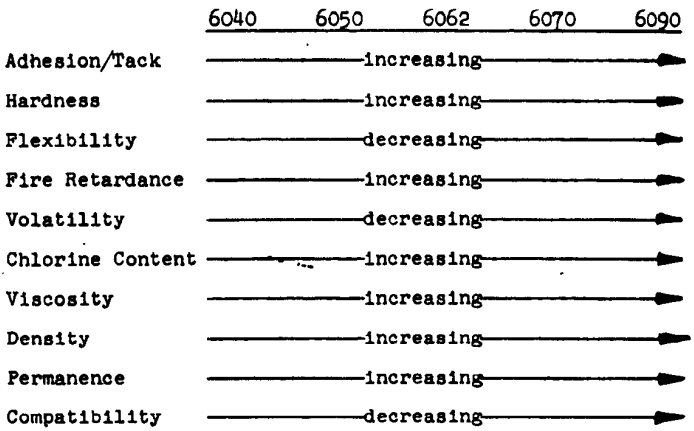
Miscellaneous Blends

Other product blends containing such other materials as Santicizer 140 for improved fire retardancy, or toluene/xylene for lower viscosities will also be made available as the demand for these specialty products develops.

AROCLORS

	5432	5442	5460
Adhesion/Tack	———	increasing	——→
Hardness	———	increasing	——→
Flexibility	———	decreasing	——→
Fire Retardance	———	increasing	——→
Volatility	———	decreasing	——→
Chlorine Content	———	increasing	——→
Viscosity	———	increasing	——→
Density	———	increasing	——→
Permanence	———	increasing	——→
Compatibility	———	decreasing	——→

AROCLOR BLENDS



Applications

Listed below are some of the applications where these products can be used:

Aroclor Blends

6040	Polyvinyl Acetate Emulsion Adhesives SBR Adhesives Miscellaneous applications where a high degree of flexibility is required.
6050	Chlorinated Rubber and other Resin systems for coatings. Inks
6062	Polysulfide Sealants/Adhesives Chlorinated Rubber Coatings and Adhesives SBR Coatings and Adhesives Miscellaneous applications where high chlorine content, high tack, are required. Inks
6070	Polysulfide Adhesives Chlorinated Rubber Adhesives Miscellaneous applications where very high chlorine content and very high tack are required.
6090	Radiation Curing Applications

Aroclors

5432	Polysulfide Sealants/Adhesives
	Chlorinated Rubber Coatings and Adhesives
	SBR Coatings and Adhesives
5442	Surface Coatings
5460	Hot Melt Adhesives, Surface Coatings

PHYSICAL PROPERTIES OF AROCLORS AND AROCLOR BLENDS

	AROCLORS				AROCLOR BLENDS				
Property	Aroclor 1221	Aroclor 5432	Aroclor 5442	Aroclor 5460	Aroclor 6040	Aroclor 6050	Aroclor 6062	Aroclor 6070	Aroclor 6090
Appearance	Clear, mobile oil	Clear, yellow viscous liquid	Clear, yellow sticky resin	Clear, yellow to amber brittle resin or flakes	Clear, light yellow mobile oil	Clear, light yellow mobile oil	Clear, yellow viscous liquid	Light yellow sticky resin	Light yellow resin
Color, Maximum	*100 APHA	2 NPA (Molten)	2 NPA (Molten)	2 NPA (Molten)	2 NPA	2 NPA	2 NPA	2 NPA	2 NPA
Specific Gravity	*1.182 - 1.192 (25°/ 15.5° C)	1.263 - 1.290 (90/ 15.5° C)	1.470 (25°/ 25° C)	1.670 (25°/ 25° C)	1.330 - 1.350 (25/ 15.5° C)	1.342 - 1.362 (65/ 15.5° C)	1.405 - 1.425 (65°/ 15.5° C)	1.418 - 1.438 (90/ 15.5° C)	-
Acidity, Maximum (Mg KOH/Gm	*0.014	-	.05	.05	0.035	.035	0.035	.035	.035
Moisture ppm Maximum	-	-	-	-	250	250	250	250	-

MONS 078757

PHYSICAL PROPERTIES OF AROCLORS AND AROCLOR BLENDS

	AROCLORS				AROCLOR BLENDS				
Property	Aroclor 1221	Aroclor 5432	Aroclor 5442	Aroclor 5460	Aroclor 6040	Aroclor 6050	Aroclor 6062	Aroclor 6070	Aroclor 6090
Viscosity (ASTM D-88)	*38-41 (100° F SUS)	50-60 (210° F SUS)	300-400 (210° F SUS)	-	122-132 (100° F SUS)	105-115 (130° F SUS)	50-60 (210° F SUS)	82-92 (210° F SUS)	-
Flash Point ° F Minimum (Cleveland Open Cup)	286-302	-	477	None to Boiling	270	290	-	-	340
Fire Point ° F Minimum (Cleveland Open Cip)	349	-	>662	None to Boiling	300	335	-	-	550
Softening Point ° C	-	-	46-52	98-105	-	-	-	-	64-70

MONS 018758

*Monsanto Specifications

PRODUCT CODES AND DRUM WEIGHTS

Product	Code	Container	Net Weight Pounds	Gross Weight Pounds	Approximate Volume FT^3
AROCLORS					
5060	1040-450-04-009	Multi-wall Bag	50	50½	0.97
5432	1040-460-04-009	55-Gallon Metal Drum	600	648	10-3/4
		5-Gallon Metal Drum	60	65	1
5442	1040-470-04-009	40-Gallon Metal Drum	450	469	7-2/3
		5-Gallon Metal Drum	50	56	1-1/12
5460	1040-480-04-009	Multi-wall Bag	50	50-1/2	0.97
AROCLOR BLENDS					
6040	1045-040-04-009	55-Gallon Metal Drum	600	648	10-3/4
		5-Gallon Metal Drum	55	60	1
6050	1045-050-04-009	55-Gallon Metal Drum	600	648	10-3/4
		5-Gallon Metal Drum	55	60	1
6062	1045-062-04-009	55-Gallon Metal Drum	600	648	10-3/4
		5-Gallon Metal Drum	60	65	1

MCNS 078759

PRODUCT CODES AND DRUM WEIGHTS

Product	Code	Container	Net Weight Pounds	Gross Weight Pounds	Approximate Volume FT^3
6070	1045-070-04-009	55-Gallon Metal Drum	600	648	10-3/4
		5-Gallon Metal Drum	60	65	1
6090	1045-090-04-009	40-Gallon Metal Drum	500	519	7-2/3
		5-Gallon Metal Drum	50	56	1-1/12

MONS 078760

Toxicity and Safe Handling

Inhalation

At ordinary temperatures, the Aroclor chlorinated polyphenyls have not presented industrial toxicological problems. The hazard of potential toxic exposure varies with their volatility: the lower-chlorinated, more volatile ones present more of a potential problem from the standpoint of both inhalation and skin contact. When Aroclor plasticizers are used at elevated temperatures, engineering controls must be applied, either by the use of closed systems or by effective local-exhaust ventilation together with general workroom exhaust.

Vapor of the liquid Aroclor plasticizers at room temperature should not be breathed in a confined space, and no vapor of any Aroclor evolved at elevated temperatures should be allowed to be dispersed into the general workroom.

Skin Contact

Continuous or repeated skin contact with the Aroclor plasticizers must be avoided by the use of gloves and protective garments, because of the possible occurrence of a condition called chloracne. Although reports of this condition caused by Aroclor are rare, it can be produced by excessive skin contact. If any Aroclor is spilled on the skin, the skin should be washed in the usual manner with a soap solution.

A burn caused by contact with a hot Aroclor should be treated like any ordinary burn. Aroclor plasticizer adhering to the burned area need not be removed immediately, unless treatment of the burn demands it, in which case either soap and water or repeated washings with a vegetable oil are recommended.

DISTRICT SALES OFFICES ALL DIVISIONS

ATLANTA, GEORGIA 30326
Lenox Towers East
3400 Peachtree Rd. N. E. — Suite 1711
Tel. (404) 577-2260

BOSTON, MASSACHUSETTS 02149
Everett Station
Tel. (617) 387-5010

CHICAGO, ILLINOIS
3158 Des Plaines Ave.
Des Plaines, Illinois 60018
Tel. (312) 296-6688

CINCINNATI, OHIO 45206
1501 Madison Road
Tel. (513) 751-6707

CLEVELAND, OHIO 44122
3645 Warrensville Center Rd.
Tel. (216) 991-5400

DETROIT, MICHIGAN 48235
500 Northland Towers East
Tel. (313) 357-0910

HONOLULU, HAWAII 96812
205 Pacific International Bldg.
677 Ala Moana Blvd., P. O. Box 3824
Tel. (808) 512-744

HOUSTON, TEXAS 77002
1300 Main Street
Tel. (713) Capitol 3-4011

LOS ANGELES, CALIFORNIA 90022
6670 E. Flotilla St.
Tel. (213) 723-2492

MINNEAPOLIS, MINNESOTA 55402
912 Northstar Center 110 S. Seventh St.
Tel. (612) 339-4651

NEW YORK, NEW YORK 10017
277 Park Avenue
Tel. (212) 922-4111

PITTSBURGH, PENNSYLVANIA 15222
No. 4 Gateway Center Bldg. Room 534
Tel. (412) 261-2156

ST. LOUIS, MISSOURI 63166
800 N. Lindbergh Blvd.
Tel. (314) Oxford 4-1000

SAN FRANCISCO BAY AREA
2710 Lafayette, Santa Clara, Calif. 95052
Tel. (408) 243-0414

SEATTLE, WASHINGTON 98104
911 Western Avenue
Tel. (206) Main 2-4203

SPRINGFIELD, MASSACHUSETTS 01101
730 Worcester Ave.
Tel. (413) 788-6911

WILMINGTON, DELAWARE 19803
2005 Concord Pike, Fairfax
Tel. (302) Olympia 8-6531

Additional District Offices are maintained by:

Agricultural Division

LULING, LOUISIANA 70070
P. O. Box 174
Tel. (504) 784-6283

MEMPHIS, TENNESSEE 38113
1023 Riverside Drive
P.O. Box 13248
Tel. (901) Whitehall 7-3151

Textiles Division

AKRON, OHIO 44313
3030 West Market St.
Tel. (216) 836-7941

ATLANTA, GEORGIA 30303
Atlanta Merchandise Mart
240 Peachtree St., N. W.
Tel. (404) 577-2260

CHARLOTTE, NORTH CAROLINA 28202
Wachovia Bank Building
129 West Trade St.
Tel. (704) 376-9871

ENGLEWOOD CLIFFS, N. J. 07631
661 Palisades Ave.
Tel. (201) 568-2151

NEW YORK, NEW YORK
350 Fifth Ave.
Tel. (201) 556-5100

Hydrocarbons & Polymers Division-Lion Oil

EL DORADO, ARKANSAS 71730
Lion Oil Building
Tel. (501) Union 3-3111

JACKSON, MISSISSIPPI 39209
P. O. Box 10937
Westland Station
Tel. (601) 362-3846

LITTLE ROCK, ARKANSAS 72203
1515 West Seventh St.
Tel. (501) Franklin 6-2437

MEMPHIS, TENNESSEE 38113
1023 Riverside Drive
P. O. Box 13248
Tel. (901) Whitehall 7-3151

Organic Chemicals Division *(Rubber Industry)*

AKRON, OHIO 44311
920 Brown Street
P. O. Box 2307
Tel. (216) Hemlock 4-1921

MONSANTO, 800 N. LINDBERGH BLVD., ST. LOUIS, MISSOURI 63166

MONS 078762