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AROCLOR® PLASTICIZERS

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

PLASTICIZERS Monsanto®

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AROCLOR PLASTICIZERS

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

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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.

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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 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.

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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	——→

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AROCLOR BLENDS

	6040	6050	6062	6070	6090
Adhesion/Tack			increasing		
Hardness			increasing		
Flexibility			decreasing		
Fire Retardance			increasing		
Volatility			decreasing		
Chlorine Content			increasing		
Viscosity			increasing		
Density			increasing		
Permanence			increasing		
Compatibility			decreasing		

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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

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Aroclors

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

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PHYSICAL PROPERTIES OF AROCLORS AND AROCLOR BLENDS

	AROCLORS				AROCLOR BLEN		
Property	Aroclor 1221	Aroclor 5432	Aroclor 5442	Aroclor 5460	Aroclor 6040	Aroclor 6050	Aroclor 6062
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
Color, Maximum	*100 APHA	2 NPA (Molten)	2 NPA (Molten)	2 NPA (Molten)	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
Acidity, Maximum (Mg KOH/Gm	*0.014	-	.05	.05	0.035	.035	0.035
Moisture ppm Maximum	-	-	-	-	250	250	250

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PHYSICAL PROPERTIES OF AROCLORS AND AROCLOR BLENDS

	AROCLORS				AROCLOR BLEND		
Property	Aroclor 1221	Aroclor 5432	Aroclor 5442	Aroclor 5460	Aroclor 6040	Aroclor 6050	Aroclor 6062
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)
Flash Point ° F Minimum (Cleveland Open Cup)	286-302	-	477	None to Boiling	270	290	-
Fire Point ° F Minimum (Cleveland Open Cip)	349	-	>662	None to Boiling	300	335	-
Softening Point ° C	-	-	46-52	98-105	-	-	-

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*Monsanto Specifications

PRODUCT CODES AND DRUM WEIGHTS

Product	Code	Container	Net Weight Pounds	Gross Weig Pounds
AROCLORS				
5060	1040-450-04-009	Multi-wall Bag	50	50½
5432	1040-460-04-009	55-Gallon Metal Drum	600	648
		5-Gallon Metal Drum	60	65
5442	1040-470-04-009	40-Gallon Metal Drum	450	469
		5-Gallon Metal Drum	50	56
5460	1040-480-04-009	Multi-wall Bag	50	50-1
AROCLOR BLENDS				
6040	1045-040-04-009	55-Gallon Metal Drum	600	648
		5-Gallon Metal Drum	55	60
6050	1045-050-04-009	55-Gallon Metal Drum	600	648
		5-Gallon Metal Drum	55	60
6062	1045-062-04-009	55-Gallon Metal Drum	600	648
		5-Gallon Metal Drum	60	65

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PRODUCT CODES AND DRUM WEIGHTS

Product	Code	Container	Net Weight Pounds	Gross Weigh Pounds
6070	1045-070-04-009	55-Gallon Metal Drum	600	648
		5-Gallon Metal Drum	60	65
6090	1045-070-04-009	40-Gallon Metal Drum	500	519
		5-Gallon Metal Drum	50	56

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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.

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