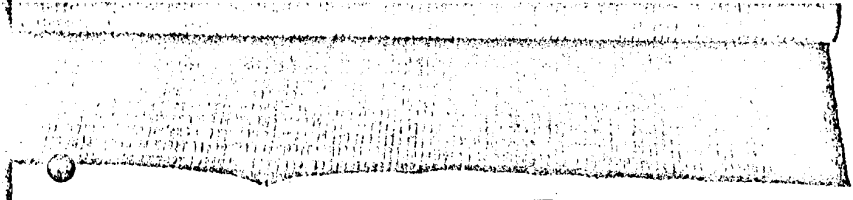
Product-Building for Profits with Monsanto Plasticizers

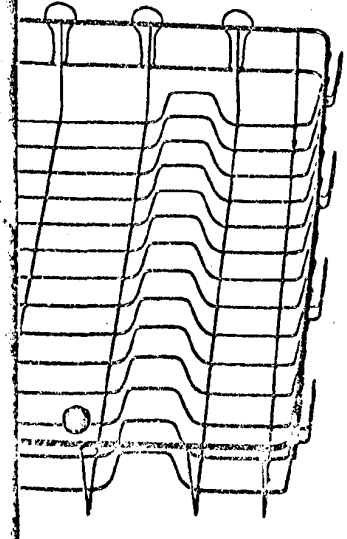
Your choice of the right plasticizer systems reduces your formulating and processing costs, and helps you "build" finished products with more profit to you.

Monsanto is America's most diversified manufacturer of primary and secondary plasticizers, and an outstanding source for sound technical information—formulating know-how not only for vinyls, but also cellulosics, styrenes, phenolics, melamines, ureas, epoxies.

Call on Monsanto for one-stop raw material service—and expert technical guidance from America's most experienced manufacturer of plasticizers. In your interest, Monsanto offers a . . .

"Plasticizers Council Service". . . For specific recommendations on plasticizer systems to increase your processing efficiency or to improve your products—contact your Monsanto representative. He can offer you "Plasticizers Council Service" on new products—or on established formulations—a service created by Monsanto to help you solve formulating problems quickly and profitably.



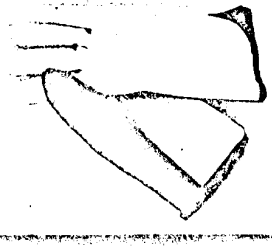








If your business is... Vinyl Dispersions and Solutions



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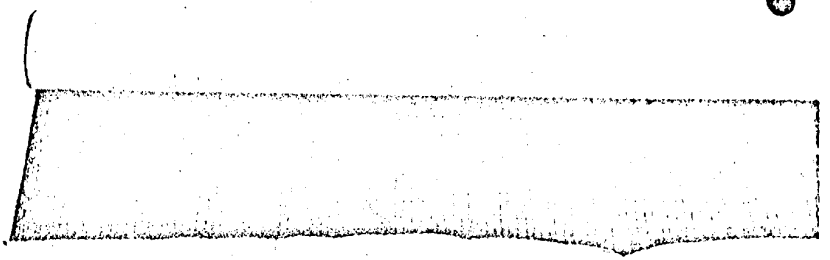
You can build product quality, reduce costs of...



...Coated Fabric Upholstery

Resistance to Staining and Abrasion... Monsanto Santicizer 160, alone or in blends with other plasticizers, imparts excellent resistance to fats, greases, oils, solvents, and common household chemicals. Most important, Santicizer 160 substantially lengthens the service life of coated fabrics by increasing resistance to abrasion. Test results (below) show the superior abrasion resistance of a vinyl composition (40% plasticizer, 60% Opalon 300) plasticized with Santicizer 160, compared with the inferior abrasion resistance of the same composition plasticized with standard dioctyl phthalate. (Test: Taber Abraser with 1000 gram load using H-22 wheels.)

Plasticized with	*Loss in weight per 1000 cycles*
Santicizer 160	105 milligrams
Dioctyl phthalate	*158 milligrams*

Flame Resistance... Monsanto Santicizer 141, an outstanding primary plasticizer for plastisols, imparts superior flame retardance, light stability, and resistance to weathering. Santicizer 141 reduces formulating costs when used to replace phosphate esters or addition of antimony oxide.

Longer Plastisol Shelf Life... Monsanto DIDA and DIDP lengthen shelf life by retarding "thickening" of plastisol formulations. This reduces costs by preventing premature "gelling", and waste of raw materials before they can be used. The graph (below) shows how Monsanto DIDA slows viscosity build-up in a typical plastisol plasticized with (1) DOP only, (2) equal parts of DOP and DOA, and (3) equal parts of DOP and Monsanto DIDP.



The volatility of Monsanto DIDA is only about one-third that of dioctyl adipate. It offers the excellent low-temperature flex of the adipates, yet eliminates the high volatility of dioctyl adipate—and can be used to replace most higher-cost, low-temperature plasticizers.

...Foam Vinyls

Foam Manufacturers can select the optimum plasticizing system—balancing cost, processing traits, and end-product properties—from the extremely versatile line of Monsanto phthalates, adipates, phosphates, phthalyl glycolates, and specialty plasticizers. Here are a few of the advantages Monsanto plasticizers offer foam-makers:

Faster Fusion... *Santicizer 141* and *Santicizer 160* speed up resin-solvating action, boost production rates, and reduce costs.

Uniform Cell Structure... Monsanto Aroclor plasticizers contribute to better cell formation in foams by reducing the viscosity of the heated formulations to the best level for cell formation. This increases the efficiency of chemical blowing agents.

Lower Formulating Costs... Monsanto HB-40 is in wide use as a co-plasticizer in vinyls to reduce costs. The presence of HB-40 also reduces the migration of primary plasticizers from vinyls to nitrocellulose lacquers. Monsanto HB-40 now is readily available for bulk shipment from Akron, Ohio; Anniston, Alabama; and Perth Amboy, New Jersey.

Controlled Texture... Monsanto DIDA upgrades the quality of foams by promoting uniform compression-deflection properties over a wide range of temperatures.

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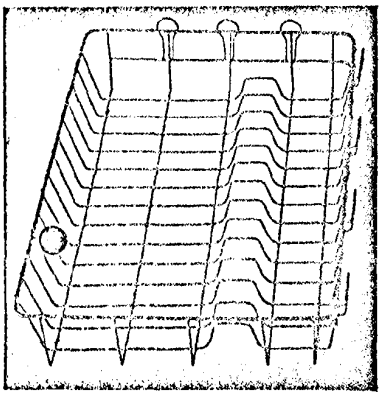
. . . Plastisol Moldings

Low Cost–Light Color . . . Monsanto HB-40 is an outstanding cost-reducer for plastisols. It is especially valuable as a co-plasticizer in rotational molding systems, where it helps control "gelling" rates and produce moldings of more uniform thickness. Monsanto HB-40 yields light-colored compounds with less need for pigment.

More Moldings Per Hour . . . Monsanto Santicizer 160, and other Monsanto fast-processing plasticizers, increase molding outputs by speeding up resin solvation and boosting fusion rates.

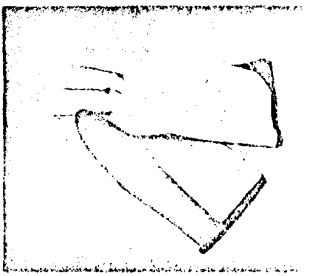


. . . Dip-Coated Products

High Soapy-Water Resistance . . . Monsanto DIDP resists the strong extracting action of soap and detergent solutions and helps prevent cracking and peeling. Test results (below) show the superior soapy-water resistance of Monsanto DIDP compared with standard dioctyl phthalate. (The test sample was a 40 mil sheet immersed for 24 hours at 50° C. in a 1% solution of Ivory soap. Formulation of the vinyl: 100 parts Opalon* 300 plasticizer as noted below: stabilizer ½ part DS-207.)

	Plasticizer % Weight	*% Loss (weight)*
DOP	30	1.10
	40	1.82
DIDP	30	0.02
	40	0.24

IVORY: Reg. Trademark of Procter & Gamble Co.



. . . Spray-on Solutions



Non-Toxicity . . . Monsanto has pioneered in the development of non-toxic plasticizers for food packaging products. Santicizer 141, Santicizer B-16, and Santicizer E-15 fully meet requirements of BAI and FDA. Santicizer 141 also contributes flame resistance, low-temperature flex, and low volatility, together with resistance to abrasion, oils, and greases.

. . . Heavy-Duty Coated Fabrics

Excellent Chemical Resistance . . . Monsanto Arochlor plasticizers impart excellent chemical stability to plastisol products because they "build" ability to resist acids, alkalis, and all common solvents.

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How buying from a one-stop source saves money

Case 1

Supplier		Three Suppliers—Three Shipments
A	DOP	5,000 pounds
B	TCP	5,000 "
Monsanto	Santicizer 160	10,000 "
		Total Cost $6,500 (LTL)
		One Mixed Truckload From Monsanto
Monsanto	DOP	5,000 pounds
"	TCP	5,000 "
"	Santicizer 160	10,000 "
		Total Cost $6,300 (TL)
		You Save $200 on 20,000 pounds

Case 2

Supplier		Two Suppliers—Two Shipments
A	DOP	10,000 pounds
A	TCP	10,000 "
Monsanto	Santicizer 160	10,000 "
		Total Cost $9,850 (TL & LTL)
		One Mixed Tank Truck From Monsanto
Monsanto	DOP	10,000 pounds
"	TCP	10,000 "
"	Santicizer 160	10,000 "
		Total Cost $9,150 (TT)
		You Save $700 on 30,000 pounds

Costs based on price schedules of February 15, 1966.

Monsanto Plasticizers

Phthalates
Dibutyl phthalate
Diethyl phthalate
Dimethyl phthalate
Diphenyl phthalate
Dioctyl phthalate
Diisooctyl phthalate
Di-n-octyl-n-decyl phthalate
Diisodecyl phthalate
Santicizer* 160
Santicizer 602
Santicizer 603
Santicizer 606
Santicizer 611
Santicizer 613

Adipates
Diisodecyl adipate
Dioctyl adipate

Phosphates
Tricresyl phosphate
Triphenyl phosphate
Santicizer 140
Santicizer 141

Phthalyl Glycolates
Santicizer E-15
Santicizer B-16
Santicizer M-17

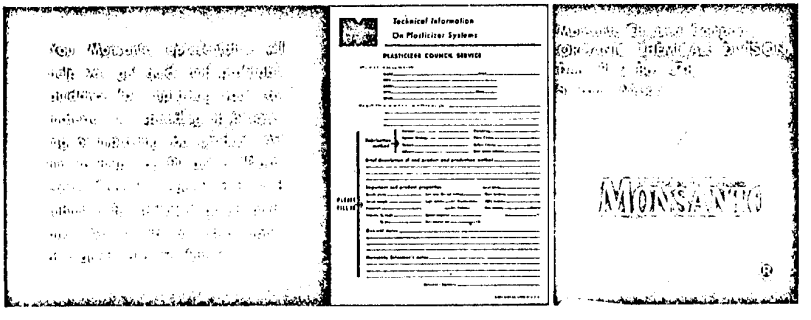
Sulfonamides
Santicizer 1-H
Santicizer 3
Santicizer 8
Santicizer 9

Sulfonamide Resins
Santolite* MHP
Santolite MS-80%

*Reg. U. S. Pat. Off.

Specialties
HB-40*
HB-20*
Santowax* R
Aroclor* 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
Aroclor 1262
Aroclor 1268
Aroclor 4465
Aroclor 5442
Aroclor 5460
Aroclor 2565

For Formulating Guidance . . .



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