free-flowing and *non-dusting*, [illegible] to its granular, crystalline form.

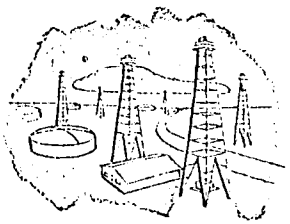
Monsanto fumaric acid is also easier to handle; comes in handy 50-pound multiwall paper bags.

Other major advantages of fumaric acid in alkyd resin manufacture include: high melting point, low order of toxicity and minimum corrosive action against materials normally used in resin making. For information on prices and delivery, mail coupon.

Phenol Used on Textiles

Either Monsanto phenol or thiourea can now be used to create a seersucker-type synthetic fabric.

The phenol or urea is "printed" on the synthetic textile, causing the fibers to shrink in the many small areas touched by the compound. The result is the puckered effect of seersucker. Mail coupon for more information.



Phosphoric Acid Aids Liquid Fuel Manufacture

Polymerizing gaseous olefine hydrocarbons to liquids has now become a matter of considerable economic interest. Reason behind this development: the large quantity of lighter unsaturates being produced as by-products in petroleum cracking.

Among the most promising catalytic method of polymerization is that using phosphoric acid as a catalyst. This process is covered by patents of a major oil company which licenses users. Phosphoric acid is spread in a thin film on a nonporous-type support.

Aroclor 1248 Useful In Heat Transfer

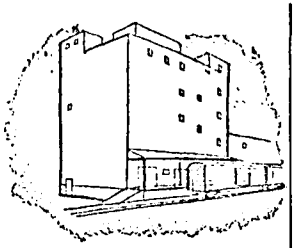
Aroclor* 1248 is rapidly gaining in popularity as a heat-transfer medium. It is a nonflammable, liquid-phase, heat-transfer fluid, designed for operation at atmospheric pressure at maximum temperatures of 300° C.

Outstanding performance characteristics of Aroclor 1248 were demonstrated in a unit designed for pilot operations to reach temperatures not attained by ordinary steam pressures.

A portable electric heater was devised with Aroclor as the heat-transfer medium. Extensive testing showed the use of Aroclor had several advantages:

- Freedom from fire hazard.
- Viscosities sufficient to permit pumping at room temperatures.
- Boiling point sufficiently above 300° C. to assure liquid condition at all times.
- Stability against heat, plus enough safety factor to accommodate accidental overheating.
- Other advantages such as controlled vaporization loss, freedom from minimum corrosive action and freedom from toxicity hazard (in properly enclosed system) were also obtained.

Use the coupon below to order a bulletin that describes the physical properties of Aroclor 1248.



21% Monsanto DCP Gives Users 4 Advantages

If you are using dicalcium phosphate, investigate the advantages of 21% dicalcium phosphate which Monsanto makes along with the 18% grade.

Each of these products has its place and application. The more concentrated form, in particular, offers these benefits to users:

1. *You save money.* Not only on freight, but also on the actual cost per unit of phosphorus f.o.b. the plant.

2. *You get flexibility in formulation.* Since less material is used, your nutritionist can vary his other ingredients . . . increase the energy value of the feed to a greater degree.

3. *Your customers* require less storage space.

4. *You gain over* 14% in phosphorus supplement warehouse space.

To put all these advantages to work for you, send the coupon today for more information on Monsanto DCP.

*Reg. U. S. Pat. Off.

MONSANTO CHEMICAL COMPANY 9/53
1702 South Second Street, St. Louis 4, Missouri

Please send information on: ☐ Fumaric Acid ☐ Phenol ☐ Orthodichlorobenzene ☐ Unitized Phthalic Shipping ☐ 21% DCP, feed grade

Please send: ☐ Bulletin P-130, "Aroclors as heat-transfer medium"

Name..... Title.....

Company.....

Street.....

City..... Zone..... State.....

0222760

TOWOLDMON0047923
WATER_PCB-00035142

Product-Building for Profits with Monsanto Plasticizers

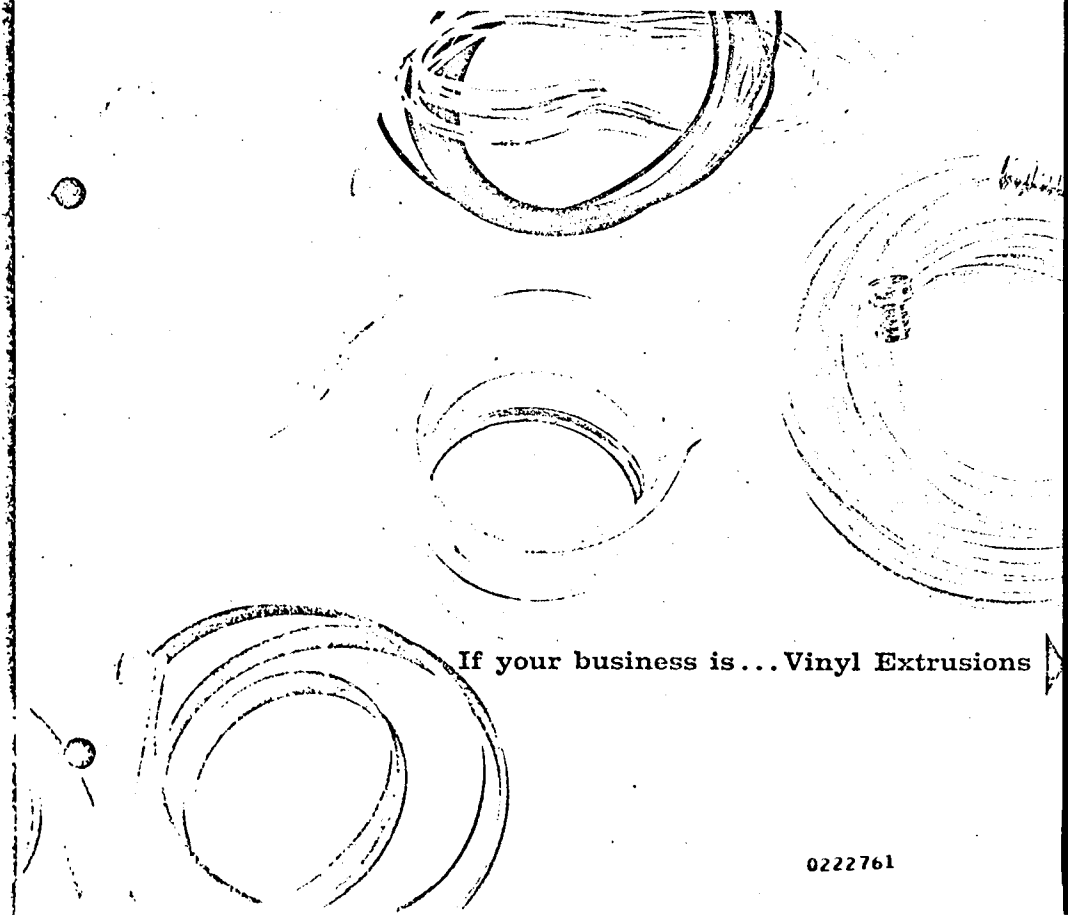
One-Stop Raw-Material Service . . . Expert Technical Guidance

Product-building with Monsanto plasticizers can reduce your formulation and processing costs, can improve your finished products.

Monsanto is America's most diversified manufacturer of primary and secondary plasticizers for all types of plastics processing, and an outstanding source for expert technical information, formulating know-how for vinyls, cellulosics, styrenes, phenolics, melamines, ureas, epoxies.

"Plasticizers Council" Service . . .

For complete information on product-building new or established raw-material formulations, on modifying end-product properties, consult Monsanto "Plasticizers Council."



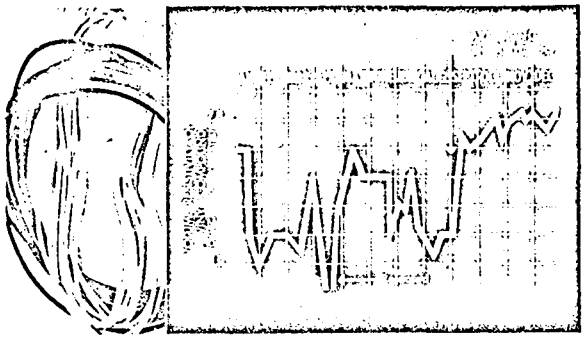
If your business is . . . Vinyl Extrusions

0222761

TOWOLDMON0047924
WATER_PCB-00035143

...u can build product quality, reduce costs with Monsanto

...Wire and Cable



Uniform Electrical Properties ... Monsanto DOP and other electrical-grade plasticizers help wire manufacturers produce high-quality wire and cable products that consistently meet rigid standards for safe load-carrying capacity. The graph shows how one manufacturer's volume-resistivity varied widely with non-uniform DOP, how reliable electrical-grade Monsanto DOP helped him meet specifications and solve a tough quality-control problem.

Lower Manufacturing Costs ... The right choice of plasticizers reduces formulating costs and increases profits. Here's an example of how electrical-grade Monsanto DIDP-E cut costs almost 10% on a pound-volume basis. With the reduced compound costs, Monsanto DIDP-E also substantially improved the electrical properties.

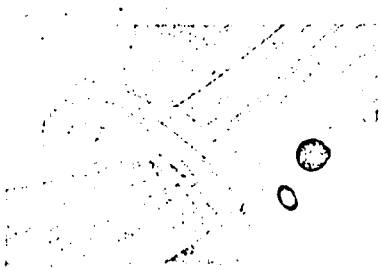
80° Wire	TCP-Polymeric Plasticized	Monsanto DIDP-E Plasticized
Compound cost/pound	27.4¢/lb.	26.1¢/lb.
Specific gravity	1.37	1.30
Compound cost/pound-volume	37.5¢/lb.	33.9¢/lb.

Improved Electrical Properties ... A recent Monsanto-controlled test of DOP/HB-40 blends for SPT and 60° wire improved electricals about 300%, reduced formulation costs 5%. Many wire manufacturers use blends of Monsanto specialty plasticizers with general-purpose plasticizers to improve electricals, increase production rates, or both.

...Garden Hose

Quality Plus Cost Control ... The unusually wide range of Monsanto plasticizers helps garden hose manufacturers select the exact combination of processing and quality features needed for balancing costs with market prices. Monsanto chemists have gathered formulation and cost data for hundreds of vinyl compounds in a wide cost range for clear and opaque stock. Formulation data is available to all garden hose customers.

...Medical and Beverage Tubings



Non-Toxic Plasticizers ... Monsanto early recognized the value of non-toxic plasticizers in the growing market for plastic food and medical tubings, and pioneered in the development of plasticizers to meet BAI and FDA specifications. Santicizer B-16 and Santicizer 141 are in wide use for food and beverage tubings, and have passed rigid feeding tests. Monsanto DOP is used for blood tubing in medical applications.

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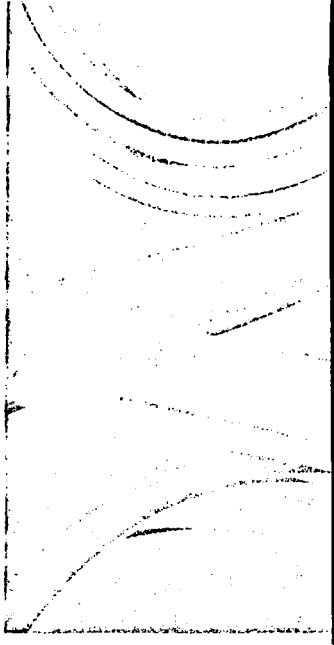
Plasticizers for . . . Vinyl Extrusions

. . . Welting, Belting, Gasketing



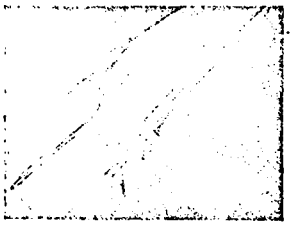
There's a "right" Monsanto primary or secondary plasticizer, or a combination, for virtually every welting, belting, or gasketing product. Here are a few of the processing and end-product qualities Monsanto plasticizers help improve:

Faster Blending, Extrusion . . . Monsanto Santicizer 160 is specially designed to increase mixing rates, boost extrusion speed, and lower product costs.

Better Light Stability, Flame Resistance . . . Monsanto Santicizer 141 improves weathering properties and imparts flame retardance . . . also increases production rates.

Less Migration . . . A small percentage of Monsanto HB-40 in vinyls helps prevent "marring" and "lifting" of wood or other surfaces coated with nitrocellulose lacquers. Low-cost, readily available Monsanto HB-40 also reduces raw-material costs.

High Soapy-Water Resistance . . . Soapy water extracts certain plasticizers from vinyl seals and gaskets in washing machines, dishwashers, and other machines exposed to washing or cleaning solutions. Monsanto DIDP offers unusually high resistance to this extracting action, helps build products with longer service life, more sales potential.



. . . Extruded Vinyl Films

Faster Fusion, Faster Processing . . . Monsanto Santicizers 140, 141, 160, and Monsanto TCP help eliminate "fish eyes" in extruded films. Their faster, more thorough solvating action speeds up processing cycles, improves clarity and gloss. Santicizer 141 also meets BAI and FDA specifications for food-packaging films.

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, 1956.

0222763

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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%

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

*Reg. U. S. Pat. Off.

Fill out the card below, and mail it to ...

For helpful action ...

"Plasticizers Council"
Monsanto Chemical Company
Dept. PL-1, 800 N. 12th Blvd.
St. Louis 1, Mo.

MONSANTO

Please fill in all information that applies to your operation

Base resin now using (including brand name)_____

Fabrication method:
Extrusion_____ Calendering_____
Injection Molding_____ Fabric Coating_____
Plastisol_____ Surface Coating_____
Adhesive_____ Other (please indicate)_____

Brief description of end-product and production method

_____

_____

_____

Important end-product properties

Specific gravity_____
Tensile strength_____
Elongation_____
Volatility, % weight_____
% plas._____

Low temp. flex and method_____
Light stability___hrs. Weatherometer
___hrs. Fadeometer
Special properties_____
Raw material cost_____¢ lb.

Shore hardness_____
100% modulus_____
Heat stability_____minutes
at_____°C.

General notes_____

_____

_____

I would like to have more information on reducing costs through purchasing plasticizers in bulk or combined shipments. I currently purchase the following plasticizers:_____

_____

NAME_____ TITLE_____

FIRM_____

ADDRESS_____

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