MONSANTO
CHEMICALS — PLASTICS

Interesting experiments with Santobrite conducted in snail control program



Certain species of snails, although harmless in appearance, act as carriers of parasites which cause schistosomiasis. This specimen, of the *Australorbis glabratus* strain from Brazil, was dead after 24-hour exposure to Santobrite. *(Picture by National Institute of Health.)*

Experiments with Monsanto's Santobrite* have been conducted by Army, Navy and Public Health Service officials in a campaign to eradicate certain species of snails.

In China, Egypt, Africa, Brazil and other countries, snails act as intermediate hosts for schistosomes, which cause schistosomiasis in humans. It is estimated that 110 million people are afflicted with schistosomiasas, a debilitating and eventually fatal disease. To date, a fully satisfactory treatment for the disease has not been found, thus giving added importance to the snail control project.

World War II gave sudden impetus to the investigation of schistosomiasis. During the invasion of Leyte in the Philippines, 1,700 U. S. troops fell victims of the disease. It is not a rapid killer, but spreads its death slowly by making its sufferer extremely listless. Death takes place as a result of its ravages . . . damage to the intestines, bladder, liver or lungs.

Schistosomiasis cannot be passed directly from one human being to another. Human infection, because of the peculiar life cycle of the parasitic worm which causes the disease, comes almost directly from the all-important snail, through polluted water.

To date, laboratory and field tests indicate, from an economic and performance standpoint, that the most efficient chemical for eradicating snails is Santobrite.

Monsanto's Santobrite is currently being used to control sap-stain in lumber, and slime and algae in industrial cooling waters. It acts as a preservative for many cellulosic products, such as fiberboard and paper, and plywood adhesives.

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Mail the coupon for two new technical bulletins

Bulletin No. O-80—Benzyl Chloride. Gives handling and technical data on benzyl chloride, a cyclic intermediate with applications ranging from pharmaceuticals to rubber accelerators.

Bulletin No. O-81—Santicizer 3.* Describes Santicizer 3, a solid, sulfonamide-type plasticizer especially useful in adhesives and coatings.

Monsanto uses new process in making benzoic acid

In its expanded plant capacity for the manufacture of benzoic acid, Monsanto is employing an entirely new synthesis from basic raw materials. It is the first such process in America. It doubles the company's capacity for making technical and U.S.P. grades of benzoic acid as well as Benthal.*

Try this low-cost, efficient plasticizer... you can get it now

Monsanto Ortho-Nitrobiphenyl may be employed as a primary plasticizer or extender for industrial-type molded, extruded, plastisol or organosol compounds. ONB is low in price . . . and available.

In vinyls, ONB helps impart resistance to grease and abrasion — may be extended by the addition of petroleum-type plasticizers, further lowering costs. ONB is an excellent plasticizer for glove coatings, window gaskets, general gasketing materials, welting, channeling, machinery supports and protective coatings.

In vinyl acetate adhesives, ONB is a low-cost primary plasticizer. It can be used in high concentrations to retain toughness and adhesion without excessive softening of the film. Its low cost permits the production of economical adhesives for tabbing cements, cardboard box sealing, for bonding acetate film to paper, for overlays or for packages with acetate windows.

In cellulosics, ortho-nitrobiphenyl serves as the plasticizer for such dark-colored products as molded toys, toy gun stocks and similar production. Excellent for reclaimed acetate.

For further information, contact the nearest Monsanto Sales Office or mail the coupon for a copy of Monsanto Technical Bulletin No. O-78.

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ortho-ETHYLNITROBENZENE has interesting reactions

This *low-cost* intermediate and its derivative, ortho-ETHYLANILINE, now are available from Monsanto. They undergo many interesting reactions to yield, for example, indole, ortho-amino and ortho-nitroacetophenone, quinolines, a substituted thiourea, an isocyanate and cinnolines. Technical bulletin and quotation available upon request.

APPROXIMATE PROPERTIES of OENB: *Molecular Weight:* 151.1 . . . *Appearance:* Yellow to green, clear liquid . . . Assay: 99-100% (including approx. 4% to 6% para isomer) . . . Boiling Point: About 228° C. . . . Crystallizing Point: About −12° to −14° C. . . . Refractive Index at 25° C.: 1.53 . . . Solubility: Miscible in most organic solvents, immiscible in water . . . Specific Gravity at 25°/25° C.: 1.1.

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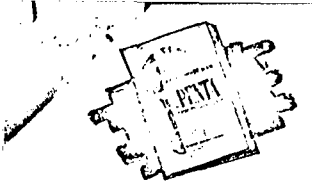
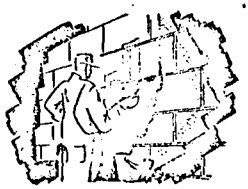


If you want to make wood last, read this book

A list of questions most often asked about Monsanto Penta (pentachlorophenol) has been compiled and the queries answered by Monsanto specialists.

If you are a user of wood in any type of construction, the booklet has a world of information that will be valuable to you. Mail the coupon for your free copy.

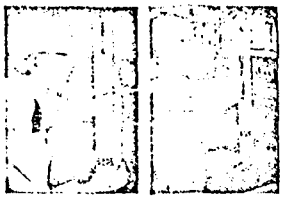
It costs no more to use AROCLORS



You can get the extra qualities that Monsanto AROCLORS* offer in high styrene-butadiene copolymer formulations, such as Pliolite S-5 and Marbon, without increasing your production costs. In addition, the AROCLORS increase stability and durability. They give formulations better resistance to actinic rays and heat. Coatings formulated with AROCLORS provide excellent protection against moisture, acids, alkali and other corrosive influence.

Ask for AROCLORS literature. Copies of the following bulletins are yours, without obligation: No. P-126, "AROCLORS as used in Pliolite S-5"... No. P-115, "THE AROCLORS"... No. P-124. "AROCLORS as used in chlorinated rubber"... No. P-131, "AROCLORS as co-plasticizers for polyvinylchloride." For your copies, contact the nearest Monsanto Sales Office or mail the coupon.

Proved product has new name



A new, high-molecular-weight alcohol ester, developed by Monsanto as an efficient defoaming agent, has been known as AE-1. The name now has been changed to *Sterox* 110.*

The numerous uses for Sterox 110 include: A defoamer in producing ethyl alcohol from molasses . . . defoamer in producing glycerol from fats . . . for foam control in the manufacture of yeast and other fermentations . . . control of foam in certain bottle-washing operations . . . solving foam problem in polystyrene latex water dispersions . . . lubricant for vinyls that are extruded or calendered . . . coplasticizer for rubber hydrochloride and chlorinated rubber.

Looking for sodium phosphates? Look to Monsanto!

Monsanto is one of the world's most important producers of phosphates, including the sodium phosphates. Quality in these products is controlled every step of the way from the phosphorus matrix to final shipment.

Monsanto mines phosphorus matrix from the hills of Idaho and Tennessee . . . converts to elemental phosphorus of better than 99% purity . . . makes phosphoric acid from which the phosphates are derived.

Monsanto Sodium Phosphates include:

Mono Sodium Phosphate

Uses:
Acid cleaners — Textiles
Water treatment

Di Sodium Phosphate

Uses:
Cheese — Water treatment
Leather — Dye
Textiles — Pigments
Detergents

Tri Sodium Phosphate

Uses:
Water softening — Water treatment
Detergent — Textiles
Metal cleaning

Tetra Sodium Pyrophosphate

Uses:
Soap — Pitch control
Textiles — Metal cleaning
Detergents — Oil well drilling
Clay dispersant — Water treatment
Dyeing — Water softening
Bleaching — Glass

Sodium Acid Pyrophosphate

Uses:
Baking Powder — Electroplating
Oil well drilling — Prepared flour

Sodium Tripoly Phosphate

Uses:
Detergents — Water treatment
Pitch control — Clay dispersant
Metal cleaners

For details on these products and their applications, contact the nearest Monsanto Sales Office or mail the coupon.

MORE PHOSPHORIC ACID

Monsanto has increased its capacity to produce phosphoric acid, ammonium phosphates and potassium phosphates for use in making liquid and water-soluble fertilizers. The advantages of liquid and soluble fertilizers are: High concentration of nutrients, quick availability to plant roots, ease of handling and application.

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MONSANTO CHEMICAL COMPANY, 1700 South Second Street, St. Louis 4, Missouri. District Sales Offices: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle, Twin Cities. In Canada, Monsanto Canada Limited, Montreal.

Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS

SERVING INDUSTRY...WHICH SERVES MANKIND

SEND INFORMATION: ☐ Benzoic Acid. ☐ Benthal. ☐ ortho-ETHYLNITROBENZENE. ☐ Sodium Phosphates for use in .....

SEND LITERATURE: ☐ Bulletin O-78, "ortho-Nitrobiphenyl." ☐ Bulletin O-80, "Benzyl Chloride." ☐ Bulletin O-81, "Santicizer 3." ☐ Booklet, "Your Answer Book on PENTA Wood Preservation." ☐ Bulletin P-115. ☐ Bulletin P-124. ☐ Bulletin P-126 ☐ Bulletin P-131. ☐ Bulletin, ortho-Ethylnitrobenzene.

SEND SAMPLE: ☐ Sterox 110

MONSANTO CHEMICAL COMPANY
1700 South Second Street, St. Louis 4, Missouri

Please send, without cost or obligation, information, literature or sample as indicated at left.

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

Company.....

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

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ermistry, July; Chemical Week, July 12; Chemical & Engineering News, July 28, 1952.

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