

THE SPRINGFIELD PLANT

The Springfield Plant is located along the Chicopee River on a 290-acre site and consists of 65 buildings. Included is Plastics Park, an employee-managed and financed recreation area. Monsanto-Springfield is the largest chemical plant in New England.

Manufacturing operations at the Springfield site were started by the Fiberloid Corporation in 1904. Nitrocellulose, which was used primarily for celluloid collars, and cast phenolics for clock cases were the major products until 1938 when Fiberloid was purchased by Monsanto.

The manufacture of SAFLEX® interlayers evolved from the technology developed for the sheeting of cellulose nitrate and cellulose acetate. The program of growth and a diversified product line began with the addition of phenolic resins at Springfield after Monsanto purchased and relocated the Resinox Corporation of Edgewater, New Jersey, in 1940 to the site.

Manufacturing facilities for polystyrene (1944), aminoplasts (1947), polyvinyl chloride and formaldehyde (1948), were added and progressively expanded, making Springfield one of the largest and most diversified polymer manufacturing plants in the United States. Polyvinyl chloride manufacturing was discontinued in August of 1975.

Barrier resins for use in CYCLE-SAFE® containers were made here until March of 1977. Facilities idled by the barrier resins phase out and product line renewal of LUSTREX® resins have been converted to the manufacture of ABS Polymers.

The present level of employment at the site is 1385 people. This includes 484 salary exempt, 219 salary nonexempt, and 682 wage personnel. Of this, Manufacturing accounts for 976 Springfield employees and acts as host for an additional 409 people working in Technology, Marketing, CED, Distribution, and Patent Departments. Springfield is not only a manufacturing facility, but the world-wide center for Plastics Research and Development.

Today's product line at the Springfield plant includes the following:

Saflex interlayers are used primarily in the manufacture of safety glass laminates for automotive windshields. The Springfield plant produces a colored gradient sheet and is the only Monsanto facility with this capability. The plant for manufacture of Saflex was brought on line in 1972 replacing an obsolete facility. It has since been expanded in 1980 to increase its capacity by 30%. The new facility also provides backup capability for clear automotive and the rapidly expanding market for architectural glass.

Lustrex polystyrene was developed at Springfield and has grown into a worldwide operation exceeding one billion pounds per year. Modern continuous operations have recently replaced the original processes to improve productivity, reduce energy requirements and meet environmental needs. Crystal polystyrene is produced on a unit originally installed in 1971 as a prototype. Impact materials are produced in a new plant which was started up in late 1977.

Colored polystyrene, flame retardant grades and other specialty products are also produced. Polystyrene is used extensively in major appliances, radio and television, housewares, toys, packaging, and furniture applications.

LUSTRAN® ABS manufacture began in 1978. ABS is widely used in appliances, automotive applications and drain, waste and vent piping. Intermediates used in the manufacture of ABS are produced in the former Lustrex CI facilities and the facilities idled by the phase out of barrier resins for Cycle-Safe containers.

The RESINS family of products at Springfield is a large one consisting of RESINOX® phenolic resins, RESIMENE® aminoplasts, and formalin. Our phenolic resins are shipped throughout the northeastern region to customers in the fiberglass insulation, automotive filters, battery separators, foundry and industrial laminating businesses. Ninety percent of Monsanto's Resimene aminoplasts are shipped throughout the United States for end uses in automotive primers and topcoats, industrial and appliance finishes, and coil coatings. Additionally, Resimenes aminoplasts in powder form are sold in the furniture and decorative laminate markets. A major expansion of our facilities for liquid Resimenes was recently completed. Formaldehyde is a basic raw material for the phenolic and amino resins. The Springfield facility is the largest formaldehyde plant in Monsanto and is the only producer in the New England states, serving a market of over 100 million pounds annually.

® Registered trademark of Monsanto Company

THE BIRCHAM BEND PLANT

Incorporated as Shawinigan Resins Corporation in July of 1937, the Bircham Bend Plant began operations early in 1938. It was established under joint ownership of Shawinigan Chemicals Ltd. of Canada and the Fiberloid Corporation of Springfield. The opening of this plant marked the beginning of a new industry in the United States — the manufacture of polyvinyl acetal resins to be used as the interlayer for automobile safety glass in replacement of the inferior cellulose acetate used previously.

Later in 1938, Monsanto acquired ownership of Fiberloid Corporation, and in April of 1963, became the sole owner of the Shawinigan Resins Corporation. Following the dissolution of Shawinigan Resins on August 1, 1965, the name was changed to Monsanto Company, Bircham Bend Plant, and it became part of the newly-formed Plastic Products and Resins Division. When Monsanto was reorganized into four operating companies in September of 1971, Bircham Bend became part of the Resin Products Division of Monsanto Polymers and Petrochemicals Company. In November of 1976, the plant became part of the newly-organized Monsanto Plastics and Resins Company.

From a modest beginning, Bircham Bend enjoyed a spectacular growth. BUTVAR® polyvinyl butyral for SAFLEX® interlayers was followed in 1939 by FORMVAR® polyvinyl formal, an insulating resin vital to U. S. industry. With the advent of World War II, Bircham Bend took up the banner with its sister industries and geared to the war effort. When rubber was scarce, Butvar was used extensively to waterproof raincoats and other equipment. Paratroopers and aviators relied on dispersions of Butvar used as a strengthener on the webbing of parachute straps, while Formvar was used as a bonding material for laminated wooden aircraft propellers.

er the war, Bircham Bend expanded its production of vinyl acetate based resins with GELVA® resin emulsions and dry Gelva polyvinyl acetates which find application in adhesives, paper coatings, paints, textiles, and chewing gum base.

During 1956, the Bircham Bend Plant entered a third major product area with the construction of a polyvinyl alcohol manufacturing facility. GELVATOL® polyvinyl alcohol finds widespread use in textile sizes and adhesives, and as a suspending agent in many polymerization systems. Successful startup of new drying facilities in 1980 has significantly reduced solvent emissions associated with previous driers.

In the midsixties, Gelva multipolymer resin solutions were introduced and now serve two major markets — pressure sensitive adhesives and reprographic binders in Electrofax® copy paper. In the midseventies, this line was complemented by the Gelva multipolymer resin emulsions to provide nonsolvent based products with properties similar to solutions.

Additional polyvinyl butyral capacity was added to Bircham Bend with the startup of a new multimillion dollar plant for Butvar in late 1976. Designed after the Antwerp facility for Butvar, the South Butvar Plant is of open construction. New debottlenecking capacity was started up in 1980. These expansions were to support our growing world-wide Saflex business.

The Bircham Bend Plant remained without a union until March of 1942, when it was organized as Local #12400, District #50 of the United Mine Workers. In 1943, the membership changed to the C.I.O., United Chemical Workers, as Local #1303, and in 1950, became affiliated with the A.F. of L. International Chemical Workers as Local #414.

From a small company employing 79 people working in four buildings, Bircham Bend has grown to a medium-sized chemical plant employing 626 people (298 salary and 328 hourly) and 47 buildings. The total facility represents a fixed capital investment exceeding \$61M, devoted to the safe and efficient manufacture of more than 125 standard products for customer use.

® Registered trademark of Monsanto Company
Trademark of RCA