

A part of Canada . . . a part of tomorrow

Union Carbide Canada Limited







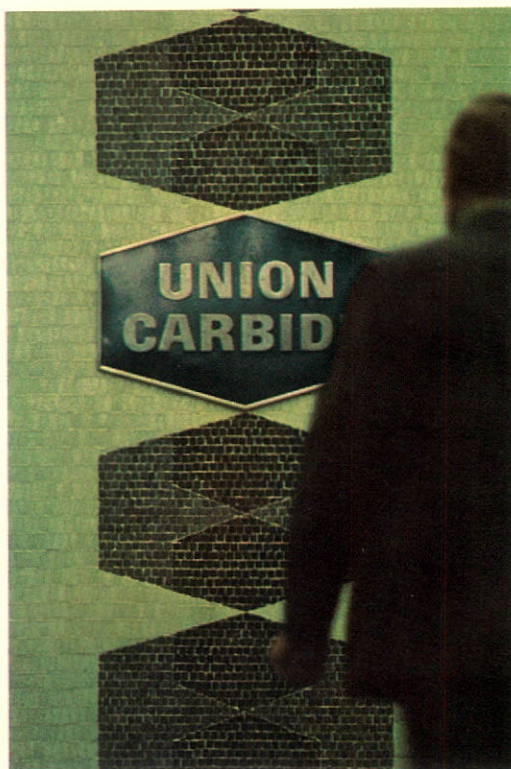


Union Carbide Canada Limited is a part of Canada's past. It traces its corporate roots back to 1907 and a plant with a single electric furnace, producing ferrosilicon for the steel industry, on the east side of Ontario's Welland Canal. Over the years, it has expanded into a broad range of activities which lend balance to a total operation that is among the most diverse in Canada.

Union Carbide Canada Limited is a part of Canada's present. With more than 40 plants and approximately 30 sales offices, it spans the nation, employing 5,000 Canadians in British Columbia, the Prairies, Ontario, Quebec and the Atlantic Provinces. Today, Union Carbide is a leading Canadian producer of chemicals, plastics, carbon products, industrial gases, metals and consumer products.

Union Carbide Canada Limited is a part of Canada's future. Its Canadian researchers, engineers and technicians are working to improve Canadian prosperity with the development of new products and product applications for industry and the consumer.

Threaded through its past, present and future is Union Carbide Canada's strength and breadth of technological innovation.









## Building blocks for industry

Chemicals are among the most versatile of Union Carbide's broad range of products. They are the basic building blocks for plastics, detergents, petroleum additives, many pharmaceuticals, man-made fibres and a host of other materials.

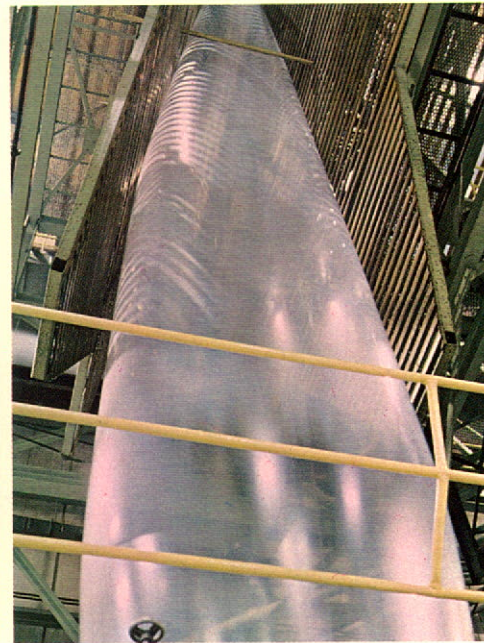
At its large petrochemical complex at Montreal East, Quebec, the company produces ethylene from petroleum gas concentrates. Using a unique process developed by Union Carbide, the ethylene is then converted into ethylene oxide, a basic chemical used in the production of ethylene glycol, ethanolamines, glycol ethers and other organic chemicals.

These chemicals find application in the sweetening of natural gas to help make it safe and convenient to use, in the manufacture of brake fluids, as a basic ingredient in automobile anti-freeze and aircraft de-icing fluids, and in the production of plastics, cosmetics, paints and synthetic textile fibres.

The Montreal East plant also manufactures polyethylene. In fact, it is Canada's largest producer of this the most widely used of all plastics. The major portion of the company's polyethylene is sold to other industries that convert it into film, wire and cable insulation, molded articles, paper coatings and many other end uses.

Polyethylene film, of which Union Carbide is the nation's leading supplier, is produced at plants in Lindsay and Orangeville, Ontario, and in Cowansville, Quebec. The principal consumer of film is the packaging industry, which uses it to wrap and bag fresh produce, bread, frozen products and other consumer items. Widespread use of film is also found in the construction and agricultural industries for the protection of buildings and crops. In shrink form, film is widely used in place of conventional corrugated cartons for shipping everything from canned goods to industrial machinery.

At its Belleville, Ontario, plant, Union Carbide produces phenolic resins and molding materials with special thermosetting



properties. The resins are used as bonding agents in fabricating such products as laminates, grinding wheels, waferboard and brake linings. They are also used in the production of industrial coatings. Phenolic molding materials are vital to the manufacture of automotive ignitions, appliance parts and electrical and communications components.



## Harnessing the air

Just as Union Carbide has developed wide application for some of nature's most common materials, it also has discovered many uses for oxygen, the most plentiful of all the elements. At 12 air separation plants across Canada, oxygen is removed from the air and distributed to customers throughout the country.

The air separation process, which consists of liquefying air at around minus 300°F and separating it into its component parts, also yields nitrogen and argon, as well as the rare gases neon, krypton and xenon.

One of oxygen's principal uses is in the manufacture of steel where it serves to improve not only quality but also production efficiency. In Sault Ste. Marie, Ontario, a company plant is capable of supplying gaseous oxygen to the giant furnaces of The Algoma Steel Corporation Limited at the rate of 1,200 tons a day.

In industry, oxygen is also used in the scarfing or surface treating of steel and in the oxy-acetylene process for cutting and joining metals. For this process, Union Carbide has developed highly sophisticated cutting and welding systems, and the company's plant in Mississauga, Ontario, pro-

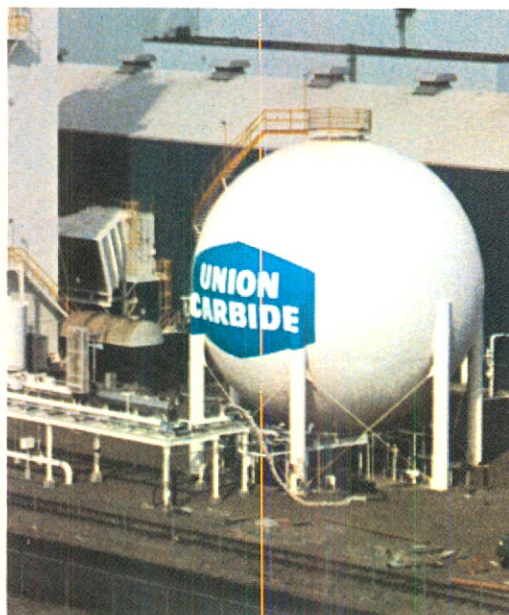
duces a wide variety of such equipment for use in metal fabrication.

Union Carbide also supplies oxygen to many of Canada's hospitals for inhalation therapy. Other medical products and services include anaesthesia gases, sterilants, fumigants and portable oxygen units for emphysema victims.

Another growing use of oxygen is in Union Carbide's UNOX system for municipal and industrial wastewater treatment. By using oxygen instead of air, the time taken to treat sewage and certain industrial effluents can be greatly reduced with an attendant significant reduction in costs.

Like oxygen, nitrogen too has many end uses. In the petrochemical and oil industries, it is used for purging pipelines and rejuvenating oil wells. In liquid form, its extreme cold is a boon for the freezing and transportation of foods.

Union Carbide also markets a broad range of high-purity gases and gas mixtures for scientific, medical and industrial research laboratories across Canada. At a specialty gases plant in Oakville, Ontario, precision mixtures can be achieved to accuracies of one part per million.









## Helping to produce better metals

Union Carbide is closely associated with another multi-use material: steel. The wide range of qualities that steel must possess are provided by certain ferroalloys. These ferroalloys, added during the refining or melting process, help increase the strength of steel, improve its electrical qualities and render it corrosion resistant.

With two smelting plants in Quebec, the company is Canada's leading ferroalloy producer. At Beauharnois, the largest and most advanced electric furnace in the Western world produces ferromanganese and silicomanganese. The 33,000-kilowatt furnace has an annual capacity of approximately 100,000 tons. In

the melting of steel, manganese helps control oxygen and sulphur content and imparts durability and toughness.

Other furnaces at Beauharnois and Chicoutimi produce ferro-silicon and pure silicon metal. Silica, one of nature's most abundant elements and the raw material for the production of silicon, is mined at the company's own quartzite quarry in Melocheville, Quebec. The quarry is operated by Union Carbide Canada Mining Ltd., a wholly owned subsidiary. The electric arc furnaces at Beauharnois and Chicoutimi use carbon electrodes to carry the enormous currents necessary to produce temperatures in excess of 3,500°F to smelt the furnace charge. The





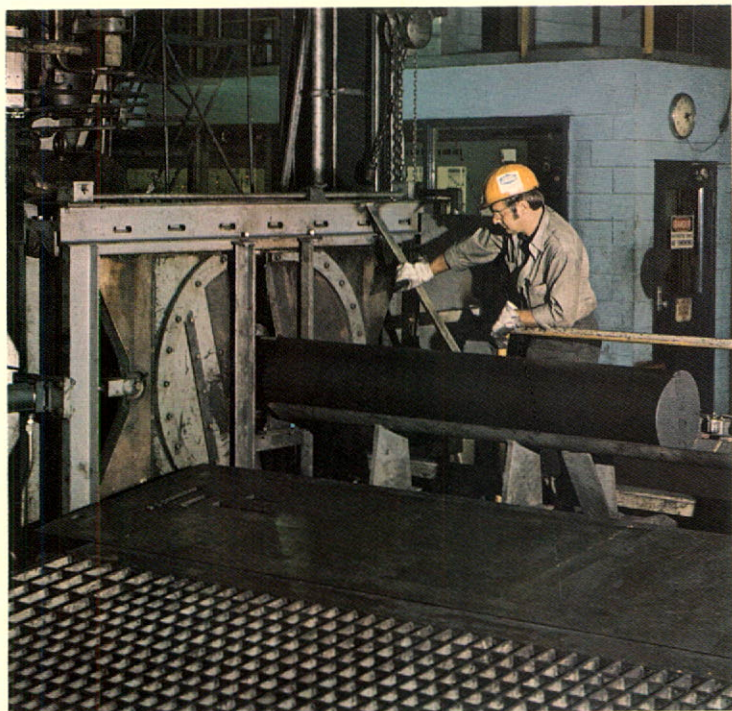
electrodes for these furnaces, as well as for the furnaces of major steel and iron producers, are manufactured at the company's carbon and graphite plant in Welland, Ontario. Future growth in the steel industry is expected to depend increasingly on the use of large, high-powered electric furnaces, requiring premium-quality graphite electrodes.

The Welland facility is Canada's largest producer of carbon and graphite products. Besides the steel industry, it supplies aluminum producers with carbon cathode blocks to line the reduction pots in which the aluminum smelting process takes place. Chemical manufacturers are also served by the supply of carbon lytic anodes

for use in the electrolytic production of chlorine and caustic.

At a plant in Toronto, carbon and graphite are fabricated into brushes for use in such diverse applications as electric generators, diesel locomotives and electric motors for household appliances. This plant also makes arc carbons for use in movie projectors, searchlights and other applications that require the most brilliant and intense of all artificial light.

In addition, Union Carbide carries out an extensive exploration program. The company is also seeking a broader involvement in mining and an expansion of its technical participation in the mineral resources industry.







## Focus on the consumer

Many of the products of Union Carbide never reach consumers although they ultimately will benefit the consumer in a variety of ways. But the company also produces a line of consumer products, most of which bear long-established household names.

EVEREADY, for example, is the well-known trademark for Union Carbide's batteries. Manufactured at plants in Toronto and Walkerton, Ontario, EVEREADY batteries come in more than 400 types and sizes. They range from the popular carbon-zinc and alkaline batteries for flashlights, lanterns, radios, cameras and tape recorders to rechargeable nickel-cadmium batteries designed for a wide variety of applications that require portable power. A broad range of flashlights and lanterns also are marketed under the EVEREADY label.

Another widely-recognized consumer item is PRESTONE II, the leading national brand of year-round automobile anti-freeze and coolant. PRESTONE II has a unique silicone-silicate formula plus special additives designed to withstand the greater demands of today's automobile engines.

Another Union Carbide product is 6-12 PLUS insect repellent. A premium brand for many years, it is marketed as a stick, lotion or aerosol spray in retail outlets across Canada.

In the kitchen, Union Carbide makes a direct contribution in the form of GLAD





home products, including food wrap and sandwich bags. GLAD garbage and home and garden bags also are leading consumer products. Conceived by Union Carbide Canada in 1963, the plastic garbage bag is used in homes throughout North America and is fast gaining worldwide popularity.

Adding glamour to the line of consumer products are LINDE stars, the man-made gems that are as perfect as the star sapphires and rubies produced by nature. Created in a complex process involving intense heat, LINDE stars are every bit as beautiful as natural gems but a fraction of the price.

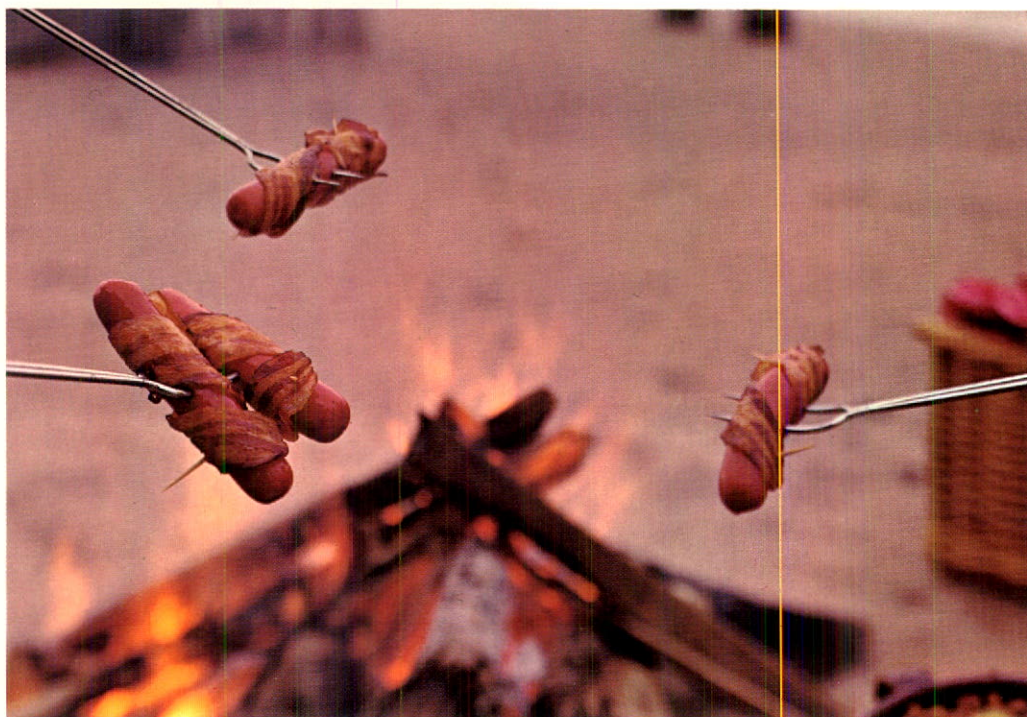
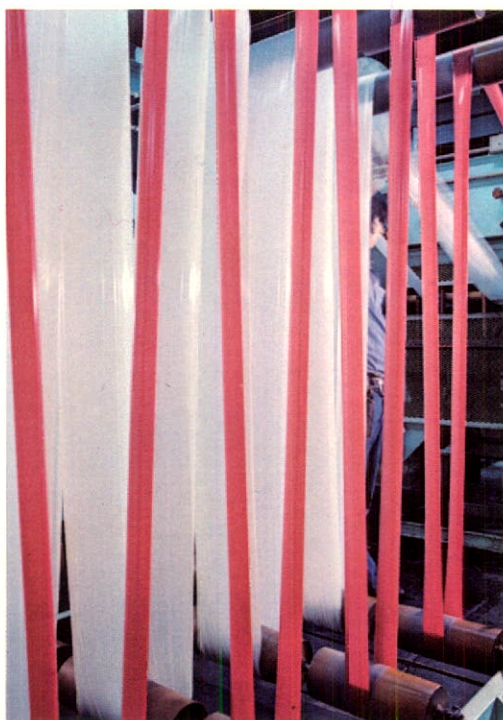




## To make a better sausage

As Canada's sole producer of synthetic food casings, Union Carbide has made notable contributions to the nation's meat packing industry. Its uniform casings of consistent strength and quality have made possible the efficient production of large volumes of sausage products. Three types of food casing products—cellulose, fibrous and plastics—are manufactured at the company's Lindsay, Ontario, plant.

Cellulose casings are used to form and process a wide variety of sausage products, including the popular wiener and fresh pork sausage, smoked hams and luncheon meats. Fibrous casings are exceptionally strong and also provide the size control required for the production of processed meats that are to be sliced and pre-packaged. Plastic tubing and bags are made in many grades and sizes for use in shrink and vacuum packaging of meat, poultry and cheese.





## Research: key to the future

Because so many of its products are technologically oriented, Union Carbide conducts an extensive program of innovation and development. Researchers and technologists working in eight laboratories develop new products and processes for existing businesses.

At the Montreal East Technical Centre, complex problems related to chemicals and plastics are analyzed. The Centre's staff seeks to discover new or improved chemical compounds and to find ways in which they can be used beneficially. The discovery of new polyethylene compounds and better production methods are also part of the activity at the Centre.

In a Toronto suburb, the Gas Products Development and Technical Services Laboratory is concerned with the development and application of new technology in electric welding, metal cutting and cryogenic systems. Here, special apparatus and machinery are designed to customer specifications and technicians are trained in their use.

Other laboratories explore new dimensions in the fields of metallurgy, phenolics, food casings and consumer products.

But not all of Union Carbide's discoveries have come from its laboratories. Many important innovations that have been of benefit to Union Carbide and its customers alike have resulted from the creative ideas of employees not directly involved in research. The commercial development of the plastic garbage bag, for example, was inspired by a forward-looking marketing team. And a highly efficient system for producing zinc battery casings was designed by engineers in the Toronto battery plant.





## A community of individuals

Union Carbide is basically a community of individuals, each with a unique blend of personal goals, skills and attitudes. Internally, the company seeks to nurture a working atmosphere in which full rein is given to individual strengths and differences within an overall objective of achieving an efficient and profitable operation.

Throughout its history, Union Carbide has followed a policy of introducing new and improved benefits on an ongoing basis. Comprehensive insurance, pension and savings plans constitute only part of the employee benefit package.

Among the first companies in Canada to adjust working hours to changing social needs, Union Carbide has introduced varying work schedules designed to meet unique local conditions and the preferences of employees at a number of plant locations. It also pioneered in the concept of Total Loss Control, an all-encompassing program to reduce injury and loss in all its forms.

The company endeavours to provide a challenging work environment and, at all times, to maintain harmony between corporate objectives and the personal beliefs and interests of employees.





## A Canadian corporate citizen

While the majority of its outstanding shares are owned by Union Carbide Corporation of New York, Union Carbide Canada has functioned as a Canadian corporate citizen for more than 65 years. It is operated by a Canadian management team, and its research, engineering, marketing and financial personnel are for the most part Canadian born and Canadian trained.

Since 1964, more than 8,500 Canadians have held an equity interest in the company and its Board of Directors is predominantly Canadian.

Though the majority of its products are sold in Canada, exports play a significant role in total business volume, accounting for as much as 14 per cent of annual sales. Carbon products, metals, food casings and other products are exported to such countries as Australia, Britain, India, Sweden and Venezuela. Even technology is exported. At the same time, the company also imports technology, gaining benefit from the multi-million dollar research activities undertaken on a world-wide basis by Union Carbide Corporation.

Its lengthy Canadian background and the broad scope of its operations have combined to uniquely equip Union Carbide Canada to meet the challenges of the increasingly technological society that will be tomorrow's world.





