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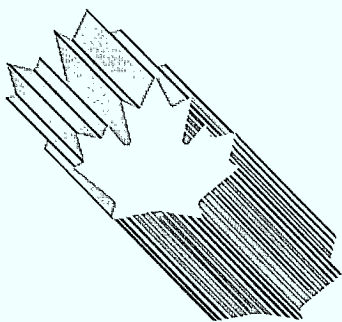


Industry, Science and
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Soap and Cleaning Compounds

Canada



I N D U S T R Y P R O F I L E

SOAP AND CLEANING COMPOUNDS

1988

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FOREWORD

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In a rapidly changing global trade environment, the international competitiveness of Canadian industry is the key to survival and growth. This Industry Profile is one of a series of papers which assess, in a summary form, the current competitiveness of Canada's industrial sectors, taking into account technological and other key factors, and changes anticipated under the Canada-U.S. Free Trade Agreement. Industry participants were consulted in the preparation of the papers.

The series is being published as steps are being taken to create the new Department of Industry, Science and Technology from the consolidation of the Department of Regional Industrial Expansion and the Ministry of State for Science and Technology. It is my intention that the series will be updated on a regular basis and continue to be a product of the new department. I sincerely hope that these profiles will be informative to those interested in Canadian industrial development and serve as a basis for discussion of industrial trends, prospects and strategic directions.

Minister

1. Structure and Performance

Structure

This industry is made up of establishments primarily engaged in the manufacture of soap in any form, synthetic detergents, cleansers, washing powders and cleansing preparations, including scouring powders and hand cleaners. It also includes plants that produce household laundry bleaches and blueing.

Soap is the term used to describe cleaning products whose starting raw materials are fats and oils, either of animal or vegetable origin. These are converted into fatty acids which are reacted with an alkali. This is known as saponification — an old and relatively unchanging process. The raw soap is then refined and conditioned, mixed with preservatives, and depending on the end use, such ingredients as perfumes, colourants, and disinfectants are added. Soaps represent approximately 10 percent of the value of the industry's shipments.

Synthetic detergents, developed during and after the Second World War, are also known as "syndets". Their active ingredients are surface-active agents or "surfactants". As the term indicates, these products reduce the surface tension of water, allowing the water to interact with other substances such as dirt, grease and grime.

Surfactants are produced, in large part, from petroleum chemicals by processes including ethoxylation, sulfonation, sulfation, esterification, quarternisation and others. A large number of these products are manufactured and their use is determined by the market for which each of them is intended. Detergents represent only one of the markets for surfactants, although an important one. Others include water treatment chemicals, textile chemicals, pulp and paper chemicals, paints, personal care products, agricultural chemicals, oil production chemicals and food processing. Although surfactants are the most important part of a synthetic detergent formulation, other ingredients are also added, such as "builders" (ingredients that increase the detergents' effectiveness), corrosion inhibitors, foam stabilizers, bleaches, enzymes and perfumes. Synthetic detergents represent approximately 55 percent of industry shipments.

Other cleaning compounds include industrial, institutional and domestic cleaning products of various formulations for floors, walls, rugs. Products, such as drain cleaners, oven cleaners, bleaches and disinfectants, are also included in this group. Together, these other cleaning compounds account for approximately 35 percent of the industry's shipments.

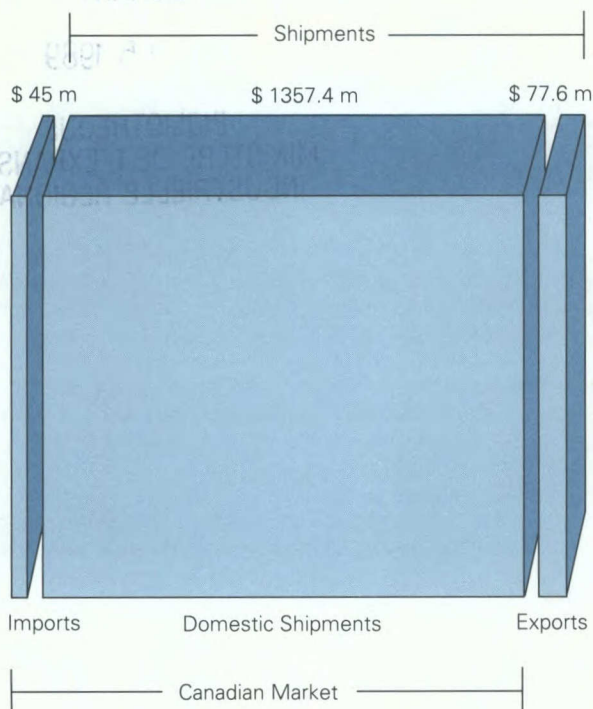
The soap and cleaning compounds industry consists of some 133 establishments owned by about 80 firms. Its 1986 shipments totalled \$1.44 billion, and its work force was approximately 8300. The industry is domestically oriented, with exports representing approximately 5.4 percent of shipments. Imports account for just 3.2 percent of the domestic market. The U.S. market accounts for more than 70 percent of the total exports, while 75 percent of imports are from the United States.

Canada



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**Imports, Exports and Domestic Shipments
1986**

A large portion of the industry is foreign controlled — subsidiaries of major multinationals account for more than 90 percent of the market. Firms such as Lever Bros. Ltd., Colgate Palmolive Canada, Procter & Gamble Inc. and Witco Chemical Canada Limited direct most of their cleaning products to the consumer market. The industry is concentrated in southern Ontario, from which about 87 percent of the shipments originate, and where 79 percent of the jobs are located.

Most of the materials required by this industry are available from Canadian production. The large multinational subsidiaries are, to varying degrees, integrated both vertically and horizontally. For example, they may produce many of the raw materials they require, such as surfactants. They may also manufacture their own plastic containers and other packaging requirements. These same firms have branched out into other areas, such as food production, personal-care products and industrial chemicals.

Smaller firms tend to focus on one or two of the industry's market areas. Thus, they may choose to concentrate on such products as industrial and institutional cleaners, bar soap for hotels and luxury soaps.

Generally, consumer products are marketed through grocery and drugstore systems, while industrial and institutional products are often sold directly by manufacturers. For the consumer products, which represent approximately 80 percent of the total market, advertising is considered paramount for success and is estimated to represent as much as 25 percent of the selling price.

Performance

In the period between 1973 and 1986, this industry's gross domestic product grew at a compounded annual real rate of 4.4 percent as compared to 2.3 percent for all manufacturing industries. Exports have grown from 0.5 percent of all shipments in 1973 to 5.4 percent in 1986, but are still not significant. Imports have remained constant at approximately three percent of the Canadian market. Employment has risen steadily from 5890 in 1973 to approximately 8300. The growth in employment continued through the latest recession, indicating a relatively secure market, the growth of which is closely related to that of the population.

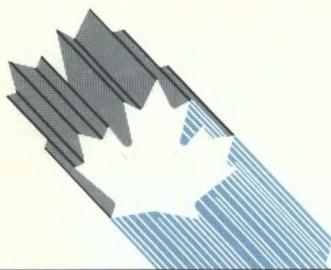
The rate of investment for this industry has averaged 3.9 percent of sales between 1973 and 1986, with an average of approximately 85 percent of investment directed to machinery and equipment. The industry's average net profit for the 1981-85 period was 5.7 percent of income.

2. Strengths and Weaknesses

Structural Factors

With minor exceptions, this industry, made up mainly of branch plants of U.S.-based firms, has maintained its share of the domestic market and does not attempt to compete in foreign markets.

Canadian detergent plants are smaller and more diversified than those of their U.S. counterparts. Labour costs are comparable. The cost of raw materials is higher for some of the inputs. Canadian markets for individual products are smaller in value, but are geographically larger. As a result, transportation and marketing costs are generally higher in Canada than in the United States. These cost disadvantages are somewhat offset by other costs faced by foreign suppliers to the Canadian market including significant import duties, exchange rates, labelling requirements, metrication and product registration requirements.



Imports are not significant, and can be accounted for by specialized products, for which the level of demand is not sufficient to justify Canadian production, and by the ongoing test-marketing of numerous products, imported on a trial basis. While exports are not important when viewed as a percentage of shipments, some Canadian-owned firms, often small to medium-sized, have been successful in exporting both to the United States and the European Community (E.C.). These firms usually offer unique products or are able to capitalize on their ability and willingness to produce smaller quantities more efficiently than some of the larger firms.

Trade-related Factors

The Canadian tariff, which has been reduced over the years, was originally a major factor in the decisions of foreign companies to establish plants in Canada.

Canadian import duty rates for soap and cleaning products (with some exceptions) are 12.8 percent. Automatic dishwashing detergents are subject to a 19.4 percent duty. Castile and laundry soaps have tariffs based on weight, 1.37¢/kg and 2.56¢/kg respectively. American tariff rates vary from 3.1 percent to 7.7 percent. The E.C. rate is 6.9 percent, while the Japanese rate varies between six and eight percent, with most items at 6.2 percent.

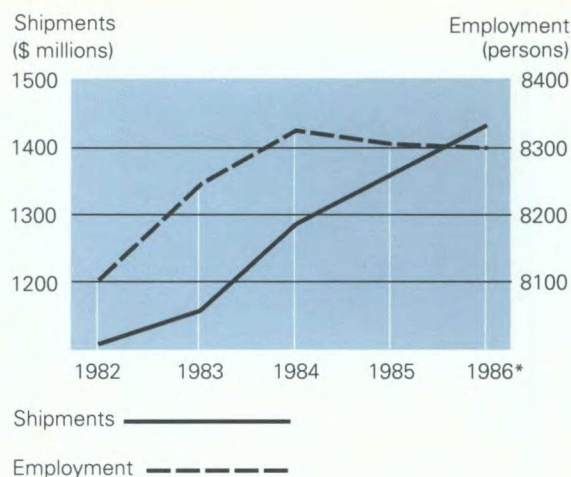
Most of the products in this industry are directed to the consumer market and, as a result, must meet the labelling requirements of the country in which they are sold. Many of the industrial and institutional products are marketed as germicides and, therefore, must meet the requirements of the *Pest Control Products Act* and other safety and health legislation and regulations. When markets are relatively small, these requirements can act as a deterrent to imports.

Under the Canada-U.S. Free Trade Agreement (FTA), both the U.S. and Canadian tariffs will be phased out over five years.

Technological Factors

In general, the Canadian industry is not at a technological disadvantage in relation to its U.S. counterpart. The international firms make their technology and the results of their research and development (R&D) readily available to their Canadian subsidiaries. The smaller Canadian and regional firms, on the other hand, specialize to meet particular demands such as those of industrial and institutional markets. They maintain their own laboratories and carry out their own R&D.

Environmental and health considerations have led to new product developments. For example, low-phosphate detergents came about because of the eutrophication problems that phosphates were said to be causing in the major waterways. Eutrophication is the process by which the rapid growth of algae causes oxygen depletion, which threatens aquatic life. Other important R&D advances for the industry include "builders" to replace phosphates, and surfactants that are biodegradable.



Total Shipments and Employment

* Estimate

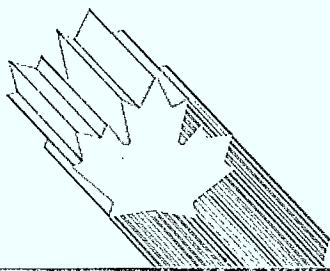
Other Factors

The soap and cleaning compounds industry works closely with government departments, especially those involved in regulatory activities. Legislation dealing with the transportation of dangerous goods, the workplace, labelling legislation and the *Pest Control Products Act*, all affect this industry. Through the Canadian Manufacturers of Chemical Specialties Association, the industry has helped develop these regulations to ensure that the products and processes conform to legislative requirements.

3. Evolving Environment

Demographic trends and changing consumer demands are fuelling new product development. Factors, such as the birth rate, working women and more single people, are causing manufacturers to develop convenience products aimed at individual population groups.

The trend to liquids from powders is another example of how market research can result in new products. Liquids are more easily and accurately measured, they dissolve more readily, there is no irritating dust, they do not cake and they can be applied, as they are, for spot treatment. New fabrics demand the development of new types of detergents, incorporating newly developed surfactants and products capable of cleaning effectively at low temperatures.



The soap and cleaning compounds market is expected to maintain its present growth rate. While the industry will continue to develop new products in response to consumer needs and tastes, additional environmental and safety regulations will have to be met both in Canada and in the United States. Legislation dealing with the disposal of household hazardous waste is now being developed which could include cleaning compounds. For example, the U.S. state of Washington has placed soaps and detergents on a preliminary list of hazardous materials.

Pressure to find substitutes for the use of phosphates in cleaning compounds will continue to be a priority. Innovation will focus on multi-functional products, especially heavy-duty liquids, combining as many of the following properties as possible: more concentration; increased effectiveness with all water temperatures, fabric types and soils; and greater convenience. Examples of new agents being considered include polymers and co-polymers, which may prove effective in enhancing the activity of "builders" and as anti-redeposition agents, which keep the soil from being redeposited on the fabric during the wash cycle.

Several new delivery systems are being marketed, including dissolving packets containing pre-measured doses, and fabric pieces impregnated with detergent, softener, stain remover and anti-static agents. If these are successful, they could slow the growth in sales of powder and liquid laundry detergents.

Toilet soaps are expected to face increased competition from synthetic "soap" bars as major companies enter the market. This growth has been stimulated by the development of new super-fatted (fatty-acid) formulas for skin conditioning.

The U.S. and Canadian laundry detergent industries are undergoing a dynamic period of change, due largely to the switch from powder to liquids, which have captured one-third of this market and may increase to 50 percent by 1992. Liquid automatic-dishwasher detergents are expected to climb from a 10 percent share of the market to about 25 percent in the next five years.

Petrochemicals are expected to continue to be the major source of raw materials through 1992. The price fluctuation for some of these products (for example, ethylene oxide) will continue to be an important factor. The industry will attempt to develop new, more effective enzyme systems, such as lipase and cellulase, which will facilitate the removal of all sorts of stains from various fabrics in all water temperatures. The search for a "builder" system that will cost-effectively replace phosphates will continue. Meanwhile, phosphate producers will attempt to make phosphates more environmentally acceptable.

The effect of the FTA on this industry is uncertain, and will depend on how the major multinational firms decide to serve the North American market. Canadian plants currently have greater tariff protection than plants in the United States. Costs are higher in Canada, mainly because of the need to manufacture a large number of products with short production runs.

The FTA could result in industry adjustment and rationalization, particularly between plants in Canada and the northeastern United States.

All of the major Canadian production facilities are located close to large U.S. markets. Also, a large percentage of the raw materials for this industry are petroleum chemical derivatives, and these will be available in Canada at competitive prices.

The smaller, Canadian-owned national and regional firms may be less affected by the FTA. Such factors as specialized small markets, different labelling and regulatory requirements, different measurement systems, the specialized service component of some of the products and transportation costs, may provide protection for these firms.

4. Competitiveness Assessment

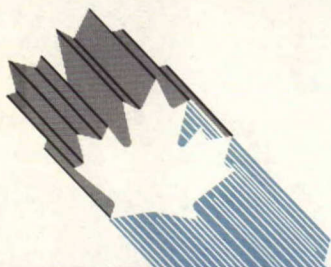
With some minor exceptions, this industry does not compete internationally and, until now, has mainly served the Canadian market behind a relatively high tariff. Because of the higher costs incurred in producing a wide range of products for a smaller market, Canadian firms have not been cost-competitive with their U.S. counterparts.

The ultimate impact of the FTA may depend largely upon decisions by multinational firms to rationalize production of these products on a North American basis. While it is possible that some of the less efficient manufacturing facilities could be phased out in favour of larger, more efficient American plants, most of them could probably be upgraded, where necessary, to become competitive. This may be based upon a site-by-site comparison of plants.

For further information concerning the subject matter contained in this profile, contact:

Resource Processing Industries Branch
Industry, Science and Technology Canada
Attention: Soap and Cleaning Compounds
235 Queen Street
Ottawa, Ontario
K1A 0H5

(613) 954-3011



PRINCIPAL STATISTICS

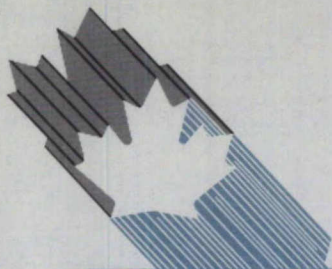
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	1973	1981	1982	1983	1984	1985	1986
Establishments	111	122	133	138	137	133	133 ^e
Employment	5 890	7 746	8 103	8 242	8 323	8 305	8 300 ^e
Shipments (\$ millions)	300.8	1 020.0	1 107.9	1 169.1	1 296.5	1 364.4	1 435.0 ^e
Gross domestic product (Constant 1981 \$ millions)	232.1	355.2	342.1	350.7	377.3	401.7	406.2
Investment (\$ millions)	8.7	43.7	40.0	29.7	63.5	57.9	52.0
Profits after tax (\$ millions)	17.6	79.5	88.2	97.4	105.0	127.6	N/A
(% of income)	3.0	5.7	5.6	5.9	5.6	5.6	N/A

TRADE STATISTICS

	1973	1981	1982	1983	1984	1985	1986
Exports (\$ millions)	1.4	21.1	30.8	24.9	27.4	63.2	77.6
Domestic shipments (\$ millions)	299.4	998.9	1 077.1	1 144.2	1 269.1	1 301.2	1 357.4
Imports (\$ millions)	15.3	37.8	33.8	36.9	39.0	39.9	45.0
Canadian market (\$ millions)	314.7	1 036.7	1 110.9	1 181.1	1 308.1	1 341.1	1 402.4
Exports as % of shipments	0.5	2.1	2.8	2.1	2.1	4.6	5.4
Imports as % of domestic market	4.9	3.7	3.0	3.1	3.0	3.0	3.2
Source of imports (% of total value)				U.S.	E.C.	Asia	Others
			1982	85.5	9.4	1.1	4.0
			1983	82.6	13.7	2.1	1.6
			1984	80.3	14.5	2.0	3.2
			1985	71.9	22.2	1.9	4.0
			1986	70.4	23.6	1.9	4.1
			1987	75.8	17.9	2.1	4.2
Destination of exports (% of total value)				U.S.	E.C.	Asia	Others
			1982	65.9	12.8	4.1	17.1
			1983	70.5	7.9	3.6	18.0
			1984	67.8	10.0	2.9	19.4
			1985	79.5	6.4	0.4	13.7
			1986	86.7	4.8	0.7	7.8
			1987	72.5	9.5	3.0	15.0

(continued)



REGIONAL DISTRIBUTION — Average over the last 3 years

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments — % of total	3.9	30.6	47.3	10.5	7.6
Employment — % of total	1.0	14.2	78.5	3.4	2.9
Shipments — % of total	0.6	8.8	87.2	2.2	1.3

MAJOR FIRMS

Name	Ownership	Location of major plants
Procter & Gamble Inc.	American	Hamilton, Brockville, Ontario
Lever Bros. Ltd.	British	Toronto, Ontario
Colgate Palmolive Canada	American	Toronto, Ontario
Witco Chemical Canada Limited	American	Willowdale, Ontario
Diversey Wyandotte Inc.	Canadian	Mississauga, Ontario
CCL Industries Inc.	Canadian	Toronto, Ontario
Ecolab Ltd.	American	Mississauga, Ontario
Boyle-Midway Canada Ltd.	American	Toronto, Ontario

e ISTC estimate

Note: Statistics Canada data have been used in the preparation of this profile.

Regional Offices

Newfoundland

Parsons Building
90 O'Leary Avenue
P.O. Box 8950
ST. JOHN'S, Newfoundland
A1B 3R9
Tel: (709) 772-4053

Prince Edward Island

Confederation Court Mall
Suite 400
134 Kent Street
P.O. Box 1115
CHARLOTTETOWN
Prince Edward Island
C1A 7M8
Tel: (902) 566-7400

Nova Scotia

1496 Lower Water Street
P.O. Box 940, Station M
HALIFAX, Nova Scotia
B3J 2V9
Tel: (902) 426-2018

New Brunswick

770 Main Street
P.O. Box 1210
MONCTON
New Brunswick
E1C 8P9
Tel: (506) 857-6400

Quebec

Tour de la Bourse
P.O. Box 247
800, place Victoria
Suite 3800
MONTREAL, Quebec
H4Z 1E8
Tel: (514) 283-8185

Ontario

Dominion Public Building
4th Floor
1 Front Street West
TORONTO, Ontario
M5J 1A4
Tel: (416) 973-5000

Manitoba

330 Portage Avenue
Room 608
P.O. Box 981
WINNIPEG, Manitoba
R3C 2V2
Tel: (204) 983-4090

Saskatchewan

105 - 21st Street East
6th Floor
SASKATOON, Saskatchewan
S7K 0B3
Tel: (306) 975-4400

Alberta

Cornerpoint Building
Suite 505
10179 - 105th Street
EDMONTON, Alberta
T5J 3S3
Tel: (403) 420-2944

British Columbia

Scotia Tower
9th Floor, Suite 900
P.O. Box 11610
650 West Georgia St.
VANCOUVER, British Columbia
V6B 5H8
Tel: (604) 666-0434

Yukon

108 Lambert Street
Suite 301
WHITEHORSE, Yukon
Y1A 1Z2
Tel: (403) 668-4655

Northwest Territories

Precambrian Building
P.O. Bag 6100
YELLOWKNIFE
Northwest Territories
X1A 1C0
Tel: (403) 920-8568

*For additional copies of this
profile contact:*

*Business Centre
Communications Branch
Industry, Science and
Technology Canada
235 Queen Street
Ottawa, Ontario
K1A 0H5*

Tel: (613) 995-5771