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IMPORT PROFILE

Investment Opportunities

SODIUM HYDROXIDE (CAUSTIC SODA) AND CHLORINE

Pub. Nos.: 87-87 and 88-87 August 1987



Government
of Canada

Regional Industrial
Expansion

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SODIUM HYDROXIDE (CAUSTIC SODA) AND CHLORINE

Pub. Nos.: 87-87 and 88-87 August 1987

Including:

Part A: Liquid and Dry Sodium Hydroxide 87-87

Part B: Chlorine 88-87

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The nearest DRIE Regional Office.
These offices are listed on the last
page of this publication.

REFERENCE SOURCES

Department of Regional Industrial Expansion
Statistics Canada
Revenue Canada
United States Department of Commerce

EXPLANATORY NOTES

Valuation

Imports are generally recorded at the values established for customs duty purposes according to the provisions of the Customs Act. Customs values are identical to selling prices for most transactions between non-affiliated companies, but customs values exceed selling prices for many transactions between affiliated companies. All values are reported in Canadian dollars and do not include duty.

Average Growth Rate

Growth rates are calculated on the basis of annual compounding.

Rounding

Figures may not add due to rounding.

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CANADIAN MARKET OPPORTUNITIES - IMPORT PROFILE

SODIUM HYDROXIDE AND CHLORINE

INTRODUCTION AND SCOPE

This report is one of a continuing series designed to increase business awareness of the potential existing for domestic production and to stimulate Canadian business to further explore potential opportunities in both the Canadian and export markets. It is important to emphasize that this report does not attempt any assessment as to the feasibility of manufacturing or competing in a particular market and should be treated as an indicator or starting point for the manufacturer or entrepreneur.

Part A of this report covers imports of sodium hydroxide classified to Import Commodity Classification (M.C.C.) codes 402-05, sodium hydroxide, liquid and 402-06 sodium hydroxide dry. Part B of this reports covers imports of chlorine, which is coded to 400-03.

Liquid sodium hydroxide accounts for approximately 90 per cent of the Canadian market of all sodium hydroxide and is shipped in bulk. The ratio is usually 50 per cent water.

Dry sodium hydroxide represents 10 per cent of the Canadian market. This type contains no liquid and is usually purchased by small users in remote areas who want to save on freight and storage. This product is shipped in drums. Sodium hydroxide's main end use is the pulp and paper industry where it is used as a pulping chemical, or newsprint mills and fine paper mills for bleaching and pulping. The remaining end uses are in sectors such as chemicals, mining and metallurgy, soap and detergents, petroleum, and the textile industries.

The total volume of imports of sodium hydroxide totalled 179 401 tonnes for a value of \$24.8 million dollars in 1986. Liquid sodium hydroxide represented the major portion of imports, accounting for 170 463 tonnes (dry weight), valued at \$21.4 million. Both liquid and dry sodium hydroxide imports declined in 1986 in comparison to 1985. The United States was the major exporter of liquid sodium hydroxide in 1986, accounting for 94 per cent the volume and 96 per cent of the value. However, it supplied only 56 per cent of the volume and 61 per cent of the value of dry sodium hydroxide.

Imports of chlorine totalled 38 000 tonnes for a value of \$7.1 million in 1986. Chlorine's largest use is in ethylene dichloride production, followed closely by the pulp and paper bleaching industry. The United States accounted for 100 per cent of imports.

MARKET SUMMARY

Sodium hydroxide and chlorine are co-produced in a 1.1 to 1 ratio by weight by the electrolysis of salt. Each product serves different markets, and the major challenge for producers is to sell out the entire production of both products. When this is not possible, operations have to be restricted to the level set by storage capacity for the product which is in oversupply.

Sodium Hydroxide

	Canada 1986 End use as <u>Per Cent of Total</u>	Tonnes (000)	Forecast Per Cent Growth <u>Per Year Through 1990</u>
Pulp and Paper	67	1 055	2.5 - 3.5
Chemicals	18	284	3.5
Mining and Metallurgy	7	110	4
Soap and detergents, petroleum, textiles, etc.	<u>8</u>	<u>126</u>	<u>3</u>
Total	100	1 575	3 (approx.)

For the pulp and paper sector, use is split about 2/3 for the bleaching of pulp and 1/3 for the pulping process itself. Low growth is expected in pulping as the trend to thermal mechanical pulping, not requiring sodium hydroxide, continues, but higher growth is expected in the bleaching application. These estimates, of course, are dependent on continued high export performance of the pulp and paper sector.

Exports of sodium hydroxide represented about 23 per cent of production in 1985/86. Imports were about 11 per cent of the total Canadian domestic market.

Chlorine

	Canada 1986 End use as <u>Per Cent of Total</u>	Tonnes (000)	Forecast Per Cent Growth <u>Per Year Through 1990</u>
Ethylene Dichloride	42	549	4
Pulp and Paper	38	497	1-3
Other (Chlorinated Solvents, Propylene Oxide, etc.)	<u>20</u>	<u>262</u>	<u>3</u>
Total	100	1 308	3 (approx.)

Exports represented about 10 per cent of production in 1985/86, with imports less than 3 per cent of the total Canadian domestic market.

MARKET SUMMARY (CONT'D)

Outlook

Capacity currently exceeds demand (demand at 80-90 per cent of capacity) and pricing will continue to reflect this position. Nevertheless, increased exports to the United States and to Pacific Rim countries appear possible since:

- Power cost represents 40 per cent to 50 per cent of manufacturing cost of these products for Canadian locations.
- Power costs, particularly in those provinces having abundant hydroelectric power (British Columbia, Manitoba, Québec, Newfoundland) are among the lowest in North America. These costs will escalate much less over the next ten years than will electricity costs in the U.S. or in the Pacific Rim countries where it is generated from fossil fuel or nuclear sources.
- New caustic chlorine plants have much lower unit power requirements and the closure of older, smaller plants in North America can be expected to continue.
- Since January 1, 1987 tariff rates are free between Canada and the U.S. Tariffs for Pacific Rim countries are generally low and do not pose a major barrier to Canadian exporters.
- The largest chemical use for chlorine is for production of ethylene dichloride for production of vinyl chloride monomer (VCM) for further processing to polyvinyl chloride plastics. While ocean shipment of chlorine is limited by international regulations, supply of ethylene dichloride or VCM to Pacific Rim countries in dedicated ships would appear to merit future investigation.

This report was prepared by:

the Market Development Branch
in collaboration with the
Petroleum and Industrial Chemicals Division
Chemicals Directorate
Resource Processing Industries Branch

DEPARTMENT OF REGIONAL INDUSTRIAL EXPANSION

PART A

LIQUID AND DRY SODIUM HYDROXIDE (87-87)



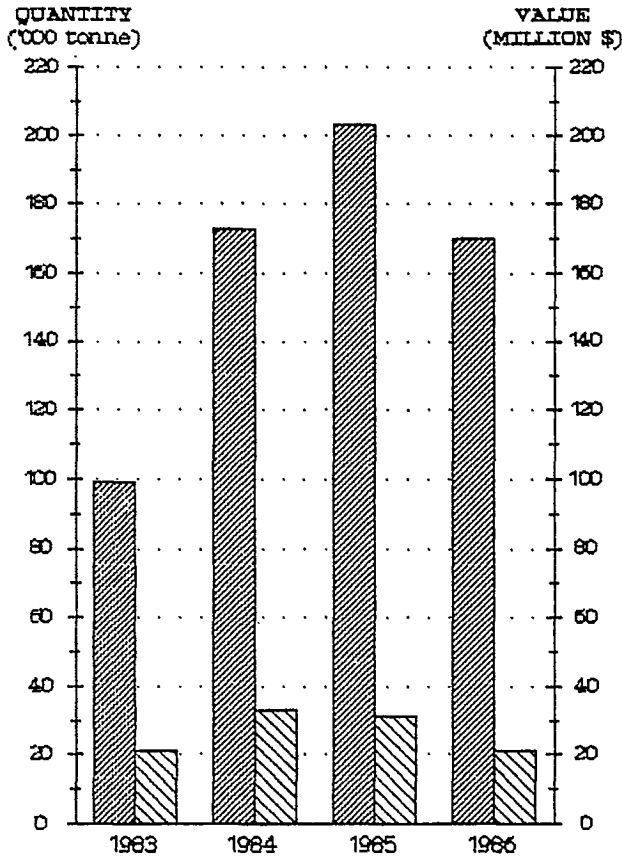
PART A: LIQUID AND DRY SODIUM HYDROXIDE

SCOPE

This section of the report analyses imports of sodium hydroxide classified to the following two commodity codes of the Import Commodity Classification (M.C.C.), 402-05 Liquid Sodium Hydroxide (Dry Weight); and 402-06 Dry Sodium Hydroxide.

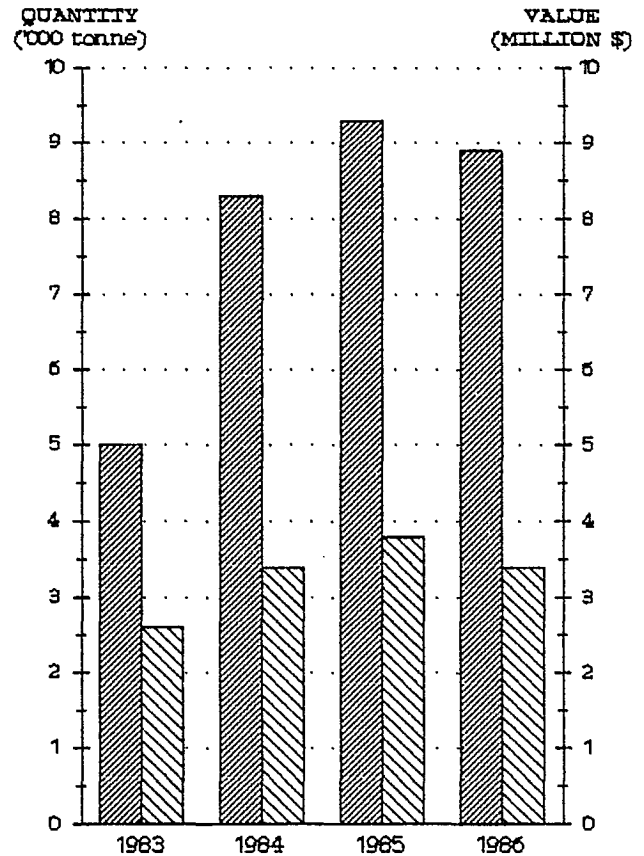
IMPORT TRENDS: OVERVIEW

LIQUID (DRY WEIGHT)



■	QTY	99	173	203	170
▨	VALUE	21	33	31	21

DRY



■	QTY	5.0	8.3	9.3	8.9
▨	VALUE	2.6	3.4	3.8	3.4

Between 1983 and 1985, the quantity of imports of liquid sodium hydroxide more than doubled from 99 to 203 thousand tonnes. In 1986, imports returned to their 1984 level of approximately 170 thousand tonnes. Unit prices dropped between 1983 and 1986 due to supply and demand. Consequently, the variations in the value of the imports were not of the same magnitude as those of volume. In 1983, imports totalled \$21 million; they increased to approximately \$30 million in 1984 and 1985. In 1986, the value of imports returned to its 1983 value of \$21 million.

The volume of imports of dry sodium hydroxide increased 68 per cent from five thousand tonnes to eight thousand tonnes from 1983 to 1984. Imports have since remained fairly constant at nine thousand tonnes. The value of the imports followed the same pattern as that of the quantities, with values of \$2.6 million in 1983, and \$3.4 million in 1986.

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS TO CANADA BY MAJOR FOREIGN COUNTRY OF EXPORT

LIQUID SODIUM HYDROXIDE (DRY WEIGHT)

<u>Foreign Country of Export</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Average Annual Growth Rate 1983-1986 %</u>	<u>Per Cent Change 1985-1986</u>	<u>Import Market Share 1986 %</u>
UNITED STATES							
Quantity (tonne)	72 821	142 017	179 868	158 972	30	-12	93.3
Value (\$000)	17 293	27 852	27 211	20 500	6	-25	95.6
Unit Price (\$)	237	196	151	129			
FEDERAL REPUBLIC OF GERMANY							
Quantity (tonne)	6 765	20 872	5 621	4 983	-10	-11	2.9
Value (\$000)	1 843	3 905	1 314	342	-43	-74	1.6
Unit Price (\$)	272	187	234	69			
BELGIUM, LUXEMBOURG							
Quantity (tonne)	7 641	7 532	34	2 626	-30	7 624	1.5
Value (\$000)	956	980	10	255	-36	2 450	1.2
Unit Price (\$)	125	130	294	97			
NORWAY							
Quantity (tonne)	9 002	0	0	1 593	-44	N/A	.9
Value (\$000)	822	0	0	168	-41	N/A	.8
Unit Price (\$)	91	N/A	N/A	105			
FRANCE							
Quantity (tonne)	0	18	2 616	2 112	N/A	-19	1.2
Value (\$000)	0	7	356	126	N/A	-65	.6
Unit Price (\$)	N/A	389	136	60			
THE NETHERLANDS							
Quantity (tonne)	2 206	2 430	10 034	176	-57	-98	.1
Value (\$000)	356	266	1 205	50	-48	-96	.2
Unit Price (\$)	161	109	120	284			

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS TO CANADA BY MAJOR FOREIGN COUNTRY OF EXPORT (CONT'D)

LIQUID SODIUM HYDROXIDE (DRY WEIGHT)

<u>Foreign Country of Export</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Average Annual Growth Rate 1983-1986 %</u>	<u>Per Cent Change 1985-1986</u>	<u>Import Market Share 1986 %</u>
OTHER							
Quantity (tonne)	821	0	5 271	0	-100	-100	0
Value (\$000)	74	0	541	0	-100	-100	0
Unit Price (\$)	90	N/A	103	N/A			
TOTAL							
Quantity (tonne)	99 256	172 869	203 444	170 463	20	-16	100
Value (\$000)	21 344	33 011	30 637	21 442	0	-30	100
Unit Price (\$)	215	191	151	126			

N/A - Not applicable

The United States was the major exporter to Canada of liquid sodium hydroxide. In terms of volume, the U.S.'s share of the import market grew from 73 per cent in 1983, to 93 per cent in 1985. Imports from the U.S. in terms of value, grew from 81 per cent in 1983 to 96 per cent in 1986.

During the four-year period, the average unit price for imports declined steadily from \$215 per tonne in 1983, to \$126 per tonne in 1986. Average unit prices in 1986 varied significantly depending on the country of origin. For that year, the average unit price per tonne ranged from \$60 for liquid sodium hydroxide from France, to \$284 for imports from the Netherlands. It should be noted that the Netherlands was the only country to increase its unit price significantly, whereas all other countries declined, compared to 1985.

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS TO CANADA BY MAJOR FOREIGN COUNTRY OF EXPORT

DRY SODIUM HYDROXIDE

<u>Foreign Country of Export</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Average Annual Growth Rate 1983-1986 %</u>	<u>Per Cent Change 1985-1986</u>	<u>Import Market Share 1986 %</u>
UNITED STATES							
Quantity (tonne)	3 300	6 315	6 307	4 961	15	-21	55.5
Value (\$000)	1 865	2 647	2 694	2 046	3	-24	60.7
Unit Price (\$)	565	419	427	412			
UNITED KINGDOM							
Quantity (tonne)	18	20	1 318	1 942	376	47	21.7
Value (\$000)	11	6	442	607	281	37	18.0
Unit Price (\$)	611	300	335	313			
THE NETHERLANDS							
Quantity (tonne)	953	852	572	956	0	67	10.7
Value (\$000)	409	324	180	272	-13	51	8.1
Unit Price (\$)	429	380	315	285			
BELGIUM, LUXEMBOURG							
Quantity (tonne)	174	198	497	515	44	4	5.8
Value (\$000)	68	72	163	164	34	1	4.9
Unit Price (\$)	391	364	328	318			
FEDERAL REPUBLIC OF GERMANY							
Quantity (tonne)	136	374	433	248	22	-43	2.8
Value (\$000)	61	149	161	110	22	-32	3.3
Unit Price (\$)	449	398	372	444			

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS TO CANADA BY MAJOR FOREIGN COUNTRY OF EXPORT (CONT'D)

DRY SODIUM HYDROXIDE

<u>Foreign Country of Export</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Average Annual Growth Rate 1983-1986 %</u>	<u>Per Cent Change 1985-1986</u>	<u>Import Market Share 1986 %</u>
OTHER							
Quantity (tonne)	369	544	222	316	-5	42	3.5
Value (\$000)	169	237	152	169	0	11	5.0
Unit Price (\$)	458	436	685	535			
<hr/>							
TOTAL							
Quantity (tonne)	4 950	8 303	9 349	8 938		22	-4
Value (\$000)	2 583	3 435	3 792	3 368		9	-11
Unit Price (\$)	522	414	406	377			

The United States was also the major exporter to Canada of dry sodium hydroxide. In terms of volume, the United States' share of imports grew from 67 per cent in 1983, to 76 per cent in 1984, then declined to 68 per cent in 1985 and 56 per cent in 1986. Imports from the U.S. in terms of value decreased from a high of 77 per cent of the total in 1984, to a low of 61 per cent in 1986.

The United Kingdom ranked second with significant increases in import market share in 1985 and 1986. In 1986, it accounted for 22 per cent of the volume and 18 per cent of the value of the import market. The Netherlands ranked a distant third.

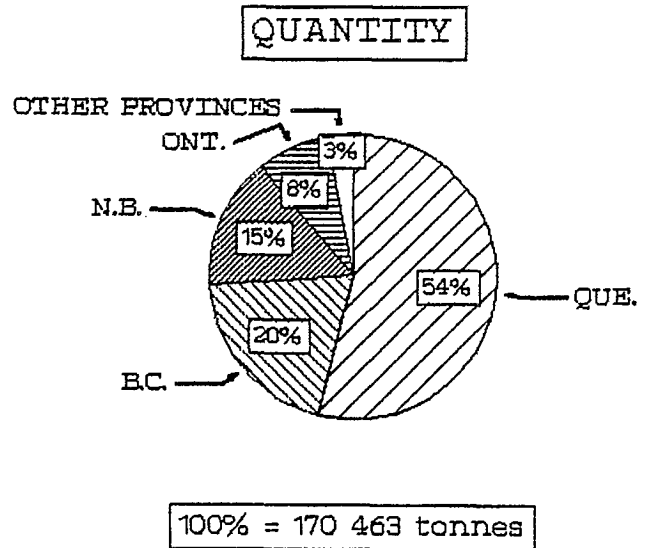
The average unit price for imports during the four-year period declined from \$522 per tonne in 1983, to \$377 per tonne in 1986. In 1986, the average unit varied from a low of \$285 per tonne from The Netherlands to a high of \$444 per tonne from the Federal Republic of Germany. The Federal Republic of Germany was the only country to increase its unit price per tonne in 1986 while all other countries declined.

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS BY PROVINCE OF CLEARANCE - 1986

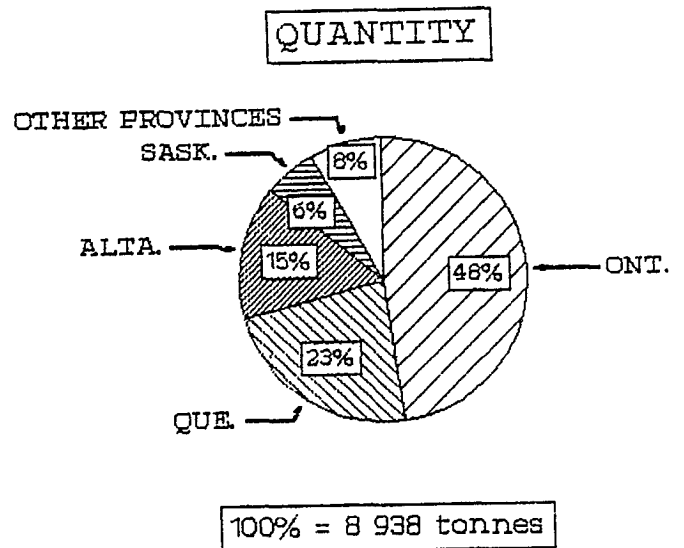
LIQUID SODIUM HYDROXIDE (DRY WEIGHT)

In 1986, imports of liquid sodium hydroxide, cleared through the provinces of Québec, British Columbia, New Brunswick and Ontario totalled 165 436 tonnes, or 97 per cent of Canadian imports. Québec had the top share with 91 492 tonnes, or 54 per cent of total imports. British Columbia was second with 34 315 tonnes, or 20 per cent of imports. New Brunswick was third with 25 833 tonnes or 15 per cent of imports, followed by Ontario accounting for 13 796 tonnes, or 8 per cent of Canada's imports. The value of imports followed a similar pattern with Québec accounting for \$9 million, or 42 per cent of total imports. British Columbia followed, accounting for \$6.9 million, or 32 per cent of Canada's imports.



DRY SODIUM HYDROXIDE

In 1986, the bulk of imports of dry sodium hydroxide were cleared through four provinces. The four provinces accounted for 8 183 tonnes, or 92 per cent of Canadian imports. Ontario was the main province of clearance totalling 4 299 tonnes, or 48 per cent of total imports. Québec ranked second with 2 056 tonnes, or 23 per cent of imports. Alberta accounted for 1 326 tonnes, or 15 per cent of imports, followed by Saskatchewan with 502 tonnes, or 6 per cent of total imports. The value of imports by province of clearance were consistent with the quantities.



NOTE: For more detailed data on imports of liquid sodium hydroxide and dry sodium hydroxide, by major foreign countries of export and provinces of clearance see Appendix A1, page 20, Appendix A2, page 21.

PART A: LIQUID AND DRY SODIUM HYDROXIDE

LIQUID SODIUM HYDROXIDE (DRY WEIGHT)

IMPORT MARKET CONCENTRATION - 1985

	<u>Top 5 Importers</u>	<u>Top 10 Importers</u>	<u>Top 15 Importers</u>	<u>All Importers</u>
Value (\$000)	22 820	28 175	29 614	30 637
Per Cent of Total Value	74	92	97	100

In 1985, the 10 major importers accounted for \$28.2 million, or 92 per cent of the value of imports of liquid sodium hydroxide. Of these 10 companies, three were manufacturers of chemicals and allied products who accounted for \$12.1 million of imports. Another four companies were manufacturers of paper and allied products, accounting for \$8.2 million of imports. Three of these 10 importers were located in the Western Provinces, three in Ontario, three in Québec, and one in the Atlantic Provinces.

NOTE: "Top importers" are the known importers with the largest imports by value in 1985.

TYPE AND LOCATION OF THE TOP 15 KNOWN IMPORTERS - 1985
(97% OF TOTAL IMPORT VALUE)

	<u>MANUFACTURERS</u>		<u>WHOLESALERS</u>		<u>TOTAL</u>	
	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>
Western Provinces	3	8 074	-	-	3	8 074
Ontario	5	10 582	3	1 947**	8	
Québec	2	9 012*	1		3	21 541***
Atlantic Provinces	1		-	-	1	
TOTAL	11	27 688	4	1 947	15	29 615
Per Cent of 1985 Total Value		90		6		97

* Québec and Atlantic Provinces aggregated to preserve confidentiality.

** Ontario and Québec aggregated to preserve confidentiality.

*** Ontario, Québec and Atlantic Provinces aggregated to preserve confidentiality.

In 1985, there were at least 66 known importers of liquid sodium hydroxide. The top 15 importers accounted for \$29.6 million, or 97 per cent of total imports. Of these 15 importers, 11 were manufacturers. Five of these companies were manufacturers of chemicals and allied products which accounted for \$12.6 million, or 41 per cent of total imports. Four of the top 15 importers were wholesalers or distributors of chemicals and allied products which accounted for \$1.9 million, or six per cent of total imports.

PART A: LIQUID AND DRY SODIUM HYDROXIDE

DRY SODIUM HYDROXIDE

IMPORT MARKET CONCENTRATION - 1985

	<u>Top 5 Importers</u>	<u>Top 10 Importers</u>	<u>Top 15 Importers</u>	<u>All Importers</u>
Value (\$000)	2 488	3 093	3 342	3 792
Per Cent of Total Value	66	82	88	100

In 1985, the 10 major importers of dry sodium hydroxide accounted for \$3.0 million, or 82 per cent of the value of imports. Six of these importers were manufacturers who accounted for \$2.5 million, or 66 per cent of total imports. Four of the six manufacturers were manufacturers of chemicals and allied products and accounted for \$1.8 million. The other four major importers were wholesalers or distributors of chemicals and allied products, accounting for \$618 thousand, or 16 per cent of imports. Seven of these 10 importers were located in Ontario.

NOTE: "Top importers" are the known importers with the largest imports by value in 1985.

TYPE AND LOCATION OF THE TOP 20 KNOWN IMPORTERS - 1985
(91% OF TOTAL IMPORT VALUE)

	<u>MANUFACTURERS</u>		<u>WHOLESALEERS</u>		<u>TOTAL</u>	
	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>
Ontario	7	2 463	6	361	13	2 824
Québec	3	174	2	456*	5	630*
Western Provinces	-	-	2		2	
Atlantic Provinces	-	-	-	-	-	-
TOTAL	10	2 637	10	817	20	3 454
Per Cent of 1985 Total Value		70		22		91

* Québec and Western Provinces aggregated to preserve confidentiality.

In 1985, there were at least 57 known importers of dry sodium hydroxide. The top 20 importers accounted for \$3.5 million, or 91 per cent of total imports. Of these 20 importers, 10 were manufacturers. Of these 10 companies, seven were manufacturers of chemicals and allied products, which accounted for \$1.9 million, or 50 per cent of total imports. Ten were wholesalers or distributors of chemicals and allied products and accounted for 22 per cent of total imports.

PART A: LIQUID AND DRY SODIUM HYDROXIDE

UNITED STATES' IMPORTS

In 1986, the United States Department of Commerce reports U.S. imports of sodium hydroxide from all countries amounted to approximately 558 528 tonnes for a value of C\$68.1 million. Canada, France and the Federal Republic of Germany were the major exporters to the U.S. Canada accounted for 51 per cent of the volume and 58 per cent of the value. For further details, see Appendix B, page 22.

CANADIAN PRODUCTION

There are at least 10 manufacturers of sodium hydroxide in Canada. In 1986, Statistics Canada reports that production of sodium hydroxide totalled 1 696 489 tonnes which was an increase of 6.7 per cent from 1985.

CANADIAN EXPORTS

Statistics Canada does not publish data on exports of sodium hydroxide. It is included with inorganic bases and metallic oxides, hydroxides and peroxides, not elsewhere specified. In 1986, industry sources indicate approximately 300 500 tonnes* were exported. U.S. imports from Canada totalled 282 887 tonnes in 1986. For further details, see Appendix B, page 22.

CANADIAN DOMESTIC MARKET

	<u>1985</u> (tonnes)	<u>1986</u> (tonnes)
Production (shipments) by Canadian Plants	1 589 249	1 696 489
Imports	<u>212 793</u>	<u>179 401</u>
Sub-Total	1 802 042	1 875 890
Exports	<u>408 500*</u>	<u>300 500*(f)</u>
Apparent Domestic Market	1 393 542	1 575 390
Import Penetration (Imports/Apparent Domestic Market)	15.3%	11.4%

* - Corpus Information Services

f - Forecasted

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS BY MAJOR FOREIGN COUNTRY OF EXPORT AND PROVINCE OF CLEARANCE - 1986

LIQUID SODIUM HYDROXIDE (DRY WEIGHT)

<u>Foreign Country Of Export</u>	<u>Canada</u>	<u>Nfld.</u>	<u>N.S.</u>	<u>P.E.I.</u>	<u>N.B.</u>	<u>Qué.</u>	<u>Ont.</u>	<u>Man.</u>	<u>Sask.</u>	<u>Alta.</u>	<u>B.C.</u>
UNITED STATES											
Quantity (tonne)	158 972	40	4 430	0	25 833	85 107	8 691	218	0	338	34 315
Value (\$000)	20 500	12	561	0	2 768	8 440	1 681	27	0	65	6 947
FEDERAL REPUBLIC OF GERMANY											
Quantity (TON)	4 983	0	0	0	0	0	4 983	0	0	0	0
Value (\$000)	342	0	0	0	0	0	342	0	0	0	0
BELGIUM, LUXEMBOURG											
Quantity (tonne)	2 626	0	0	0	0	2 609	17	0	0	0	0
Value (\$000)	255	0	0	0	0	250	5	0	0	0	0
NORWAY											
Quantity (tonne)	1 593	0	0	0	0	1 593	0	0	0	0	0
Value (\$000)	168	0	0	0	0	168	0	0	0	0	0
FRANCE											
Quantity (tonne)	2 112	0	0	0	0	2 112	0	0	0	0	0
Value (\$000)	126	0	0	0	0	126	0	0	0	0	0
THE NETHERLANDS											
Quantity (tonne)	176	0	0	0	0	71	105	0	0	0	0
Value (\$000)	50	0	0	0	0	20	31	0	0	0	0
OTHER											
Quantity (tonne)	1	0	0	0	0	1	0	0	0	0	0
Value (\$000)	1	0	0	0	0	1	0	0	0	0	0
TOTAL											
Quantity (tonne)	170 463	40	4 430	0	25 833	91 492	13 796	218	0	338	34 315
Value (\$000)	21 442	12	561	0	2 768	9 005	2 058	27	0	65	6 947

PART A: LIQUID AND DRY SODIUM HYDROXIDE

IMPORTS BY MAJOR FOREIGN COUNTRY OF EXPORT AND PROVINCE OF CLEARANCE - 1986

DRY SODIUM HYDROXIDE

<u>Foreign Country Of Export</u>	<u>Canada</u>	<u>Nfld.</u>	<u>N.S.</u>	<u>P.E.I.</u>	<u>N.B.</u>	<u>Qué.</u>	<u>Ont.</u>	<u>Man.</u>	<u>Sask.</u>	<u>Alta.</u>	<u>B.C.</u>
UNITED STATES											
Quantity (tonne)	4 961	0	0	0	19	317	2 584	185	502	1 269	86
Value (\$000)	2 046	0	0	0	9	95	1 007	74	208	612	42
UNITED KINGDOM											
Quantity (tonne)	1 942	0	157	0	0	1 024	453	2	0	37	269
Value (\$000)	607	0	53	0	0	320	132	7	0	12	83
THE NETHERLANDS											
Quantity (tonne)	956	0	18	0	0	389	549	0	0	0	0
Value (\$000)	272	0	5	0	0	112	155	0	0	0	0
BELGIUM, LUXEMBOURG											
Quantity (tonne)	515	0	18	0	0	137	359	0	0	0	0
Value (\$000)	164	0	5	0	0	50	108	0	0	0	0
FEDERAL REPUBLIC OF GERMANY											
Quantity (tonne)	248	0	0	0	0	100	148	0	0	0	0
Value (\$000)	110	0	0	0	0	34	76	0	0	0	0
OTHER											
Quantity (tonne)	316	0	0	0	0	89	207	0	0	20	0
Value (\$000)	169	0	0	0	0	96	63	0	0	10	0
TOTAL											
Quantity (tonne)	8 938	0	193	0	19	2 056	4 299	187	502	1 326	355
Value (\$000)	3 368	0	63	0	9	707	1 542	81	208	634	125

PART A: LIQUID AND DRY SODIUM HYDROXIDE

UNITED STATES' IMPORTS BY COUNTRY OF ORIGIN - 1986

Due to differences in the import coding systems of the United States and Canada, the product content of commodity codes may differ slightly.

<u>U.S. TARIFF SCHEDULE NUMBER</u>	<u>COMMODITY DESCRIPTION</u>	<u>COUNTRY OF ORIGIN</u>	<u>QUANTITY (tonne)</u>	<u>VALUE⁽¹⁾ (C\$000)</u>
421-08-00	Sodium Hydroxide:	Canada	282 561	39.7
		France	63 077	5.5
		Federal Republic of Germany	59 860	5.5
		Other	<u>153 030</u>	<u>17.4</u>
		TOTAL	558 528	68.1

(1) Conversion factor for U.S. to Canadian dollars = 1.3894 (yearly average, 1986)

Source: United States Department of Commerce. U.S. Imports for Consumption (Report No. IM 146, December, 1986).

PART A: LIQUID AND DRY SODIUM HYDROXIDE

CANADIAN TARIFFS

Tariff Item	Description	% of Total Import Value (1985) Liquid	% of Total Import Value (1985) Dry	Tariff Treatment				
				British Preferential Tariff %	Most Favoured Nation Tariff %	General Tariff %	General Preferential Tariff %	U.K. and Ireland %
92817-03	Sodium hydroxide (caustic soda):	97	62	3.8	3.8	25	Free	3.8
	January 1, 1985			1.9	1.9	25	Free	1.9
	January 1, 1986			Free	Free	25	Free	Free
92817-01	Potassium hydroxide (caustic potash):	2	1	3.8	3.8	20	2.5	3.8
	January 1, 1985			1.9	1.9	20	1.0	1.9
	January 1, 1986			Free	Free	20	Free	Free
49205-01	Drilling mud and additives therefor for use in drilling for oil, natural gas, minerals or water:	0	36	Free	Free	Free	Free	Free

Tariff Arrangements and Foreign Countries of Export:

Exporting countries which qualify for the Most Favoured Nation tariff treatment: United States, Federal Republic of Germany, Belgium, Luxembourg, Norway, France, The Netherlands

Exporting country which qualifies for the Most Favoured Nation tariff treatment or U.K. and Ireland: United Kingdom

ENQUIRIES CONCERNING TARIFFS SHOULD BE DIRECTED TO THE NEAREST CUSTOMS AND EXCISE OFFICE OR TO:

TARIFF PROGRAMS
 REVENUE CANADA
 CUSTOMS AND EXCISE
 OTTAWA, ONTARIO
 K1A 0L5
 TEL: (613) 954-6903

PART A: LIQUID AND DRY SODIUM HYDROXIDECANADIAN IMPORTERS

Importers of sodium hydroxide during 1985, as indicated in this report, are listed below in alphabetical order. This list includes all importers except individuals and a minimal number of importers whose names were not available. The numbers in brackets following the names of the importers indicate the specific types of sodium hydroxide imported: (1) sodium hydroxide, liquid; (2) sodium hydroxide, dry.

<u>Name</u>	<u>Address</u>	<u>Name</u>	<u>Address</u>
A & K Petro Chem Industries Ltd.(1)(2)	Weston, Ont.	Chemfleet Chemical Ltd.(1)	Mississauga, Ont.
Aluminum Company of Canada Ltd.(1)	Montréal, Qué.	Chemonics Scientific Ltd.(1)(2)	Calgary, Alta.
Amberine Products Ltd.(1)	Victoria, B.C.	Chrysler Canada Limited(1)	Windsor, Ont.
American Hospital Supply Canada Inc.(1)	Mississauga, Ont.	Circo Craft Co. Inc.(1)	Kirkland, Qué.
Amplex Chemical Prod. Ltd.(2)	St-Laurent, Qué.	Clayton Sales & Service Ltd.(1)(2)	Markham, Ont.
Anachemia Ltd.(1)	Lachine, Qué.	Construction Product Distribution Services, Div. of 87317 Can Ltd.(1)	Concord, Ont.
Atochem Canada Inc.(2)	Mississauga, Ont.	Corner Brook Pulp & Paper Ltd.(1)	Corner Brook, Nfld.
Automotive Plastic Paint Manufacturing Ltd.(1)	Bowmanville, Ont.	Crown Cork & Seal Canada Inc.(1)	Concord, Ont.
Axxon Chemicals Inc.(1)	Brampton, Ont.	Cyanamid Canada Inc.(1)	Willowdale, Ont.
B D H Chemicals Canada Limited(1)(2)	Toronto, Ont.	Days Engraving Service Ltd.(2)	Edmonton, Alta.
BCM Technologies Ltd.(1)	Amherstburg, Ont.	Deloro Stellite, Division Cabot Canada Ltd.(2)	Belleville, Ont.
Baltimore Aircoil Interamerican Corporation(1)	Baltimore, MD, U.S.A.*	Diamond Shamrock Canada Ltd.(1)(2)	Hamilton, Ont.
Bartek Chemical Co. Ltd.(1)	Burlington, Ont.	Diversey (Canada) Ltd.(1)	Mississauga, Ont.
Benson Chemicals Ltd.(1)	Freelton, Ont.	Dow Chemical Canada Inc.(1)	Sarnia, Ont.
Borden Chemical, Western Div. of Borden Co. Ltd.(2)	Vancouver, B.C.	Dupont of Canada Ltd.(1)	Mississauga, Ont.
C I L Inc.(1)(2)	Willowdale, Ont.	Erco, a Division of Tenneco Canada Ltd.(1)(2)	Islington, Ont.
CIP Inc.(1)	Vancouver, B.C.	F M C of Canada Ltd.(1)	Squamish, B.C.
Canada Colors & Chemicals Ltd.(1)(2)	Don Mills, Ont.	Fisher Scientific Company Ltd.(1)(2)	Ottawa, Ont.
Canadawide Scientific Ltd.(2)	Ottawa, Ont.	Ford Motor Company of Canada Ltd.(1)	Oakville, Ont.
Canadian General Electric Co. Ltd.(2)	Toronto, Ont.	Fryston Can Inc.(2)	Mississauga, Ont.
Canadian Occidental Petroleum Ltd.(1)	Calgary, Alta.	Hall-Chem International Inc.(1)	Montréal, Qué.
Canadian Oxy Metal Finishing Ltd.(2)	Calgary, Alta.	Halliburton Services Limited(2)	Calgary, Alta.
Can Lab Ltd.(2)	Toronto, Ont.	Hoechst Canada Inc.(1)(2)	Montréal, Qué.
Cedar West Building Supplies Inc.(1)	Edmonton, Alta.	Hollimex Products Ltd.(2)	Edmonton, Alta.
Cedar Wood Building Products Ltd.(1)	Edmonton, Alta.	I B M Canada Ltd.(1)(2)	Markam, Ont.
Chemarketing Industries Inc.(1)	Mississauga, Ont.	Imperial Oil Ltd.(2)	Don Mills, Ont.
		Kaiser Aluminum & Chemical of Canada Ltd.(1)	Scarborough, Ont.
		Kert Chemical Industries Inc.(1)	Weston, Ont.

CANADIAN IMPORTERS (CONT'D)

<u>Name</u>	<u>Address</u>	<u>Name</u>	<u>Address</u>
Kingsley & Keith (Canada) Inc.(1)	Etobicoke, Ont.	Quadra Chemicals Ltd./Quadra Chimie Ltée(2)	St-Laurent, Qué.
Kodak Canada Inc.(2)	Toronto, Ont.	Quenord Inc.(1)	Magog, Qué.
Koomey Control Systems of Can. Ltd.(1)	Nisku, Alta.	Recochem Inc.(2)	Montréal, Qué.
Korkay System Canada Ltd.(2)	Gananoque, Ont.	Restoration Hydrosolv Inc.(2)	Montréal, Qué.
La Compagnie de Papier Q N S Ltée(1)	Baie Comeau, Qué.	Richardson-Vicks Limited(1)	Weston, Ont.
Lamoureux International Inc.(1)(2)	Montréal, Qué.	Robert Neill Co.(2)	Sutton West, Ont.
Lever Brothers Limited(1)	Toronto, Ont.	Sargent-Welch Scientific of Canada Ltd.(2)	Skokie, IL, U.S.A.*
Lubrizol of Canada Ltd.(2)	Niagara Falls, Ont.	Shibley Co.(1)	Newton, MN, U.S.A.*
MacDermid Chemicals Inc.(2)	Mississauga, Ont.	Sodrox Chemicals Limited(1)	Guelph, Ont.
Mackenzie & Feimann Ltd.(2)	North Vancouver, B.C.	Stelco Inc.(1)	Hamilton, Ont.
Mallinckrodt Canada Inc.(2)	Pointe-Claire, Qué.	Stormont Chemicals Limited(2)	Toronto, Ont.
May & Baker Canada Inc.(1)(2)	Mississauga, Ont.	Temuss Products Canada Ltd.(1)	Ajax, Ont.
McCall Chemical Co. Can Ltd.(2)	New Westminster, B.C.	The Barbee Co. of Canada Inc.(1)	Mississauga, Ont.
Nacan Products Limited(1)	Bramalea, Ont.	The Ro-Tyme Chemical Corporation(2)	Orangeville, Ont.
National Restaurant Equipment Inc.(2)	St-Laurent, Qué.	Trans-Canada Resources Ltd.(2)	Calgary, Alta.
PPG Canada Inc.(2)	Toronto, Ont.	Uniroyal Ltd.(1)	Kitchener, Ont.
Pennwalt Inc.(1)(2)	Oakville, Ont.	University of Victoria(2)	Victoria, B.C.
Polyresins Inc.(2)	Toronto, Ont.	Van Waters & Rogers Ltd.(1)(2)	Richmond, B.C.
Procter & Gamble Inc.(2)	Hamilton, Ont.	Westar Timber Ltd.(1)	Vancouver, B.C.
Products Chimiques Handy Ltée(1)	La Prairie, Qué.	Witco Canada Inc.(1)	Willowdale, Ont.
		Wyo-Ben Products Inc.(2)	Edmonton, Alta.

* Non-resident importer



PART B

CHLORINE (88-87)

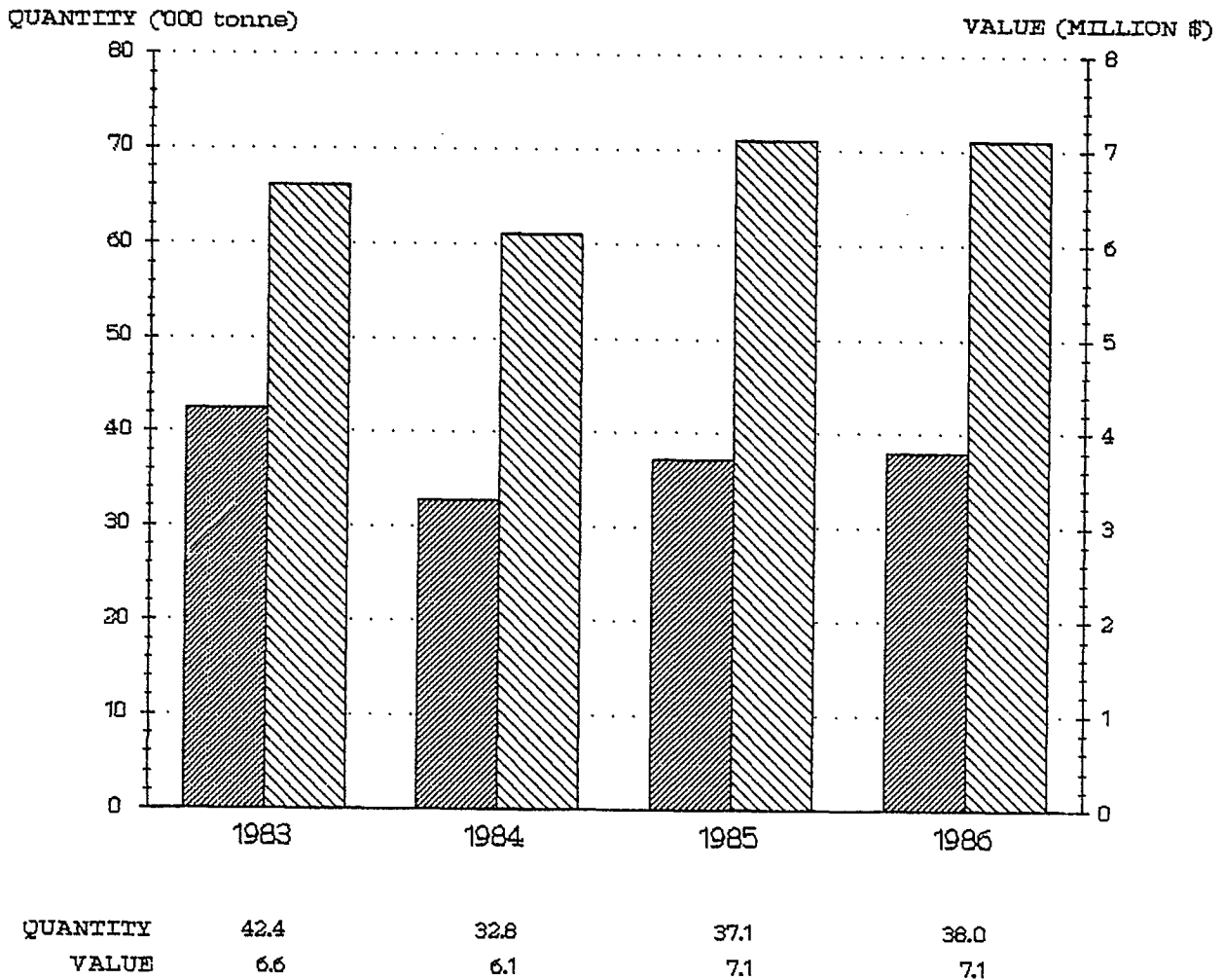


PART B: CHLORINE

SCOPE

This section of the report covers imports of chlorine, classified to Import Commodity Classification (M.C.C.) 400-03.

IMPORT TRENDS: OVERVIEW



Imports of chlorine have remained steady since 1983. In 1986, imports totalled 38 thousand tonnes valued at \$7 million.

PART B: CHLORINE

IMPORTS TO CANADA BY MAJOR FOREIGN COUNTRY OF EXPORT

<u>Foreign Country of Export</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>Unit Price 1986</u> \$	<u>Average Annual Growth Rate 1983-1986</u> %	<u>Per cent Change 1985-1986</u>
UNITED STATES							
Quantity (tonne)	42 351	32 848	37 141	38 014		-3	2
Value (\$000)	6 614	6 108	7 071	7 046	185	2	0
UNITED KINGDOM							
Quantity (tonne)	0	0	0	1*		N/A	N/A
Value (\$000)	0	0	0	41	N/A	N/A	N/A
TOTAL							
Quantity (tonne)	42 351	32 848	37 141	38 014		-3	2
Value (\$000)	6 614	6 108	7 071	7 087		2	0
Unit Price \$/tonne	156	186	190	186			

* Less than one tonne

N/A - Not applicable

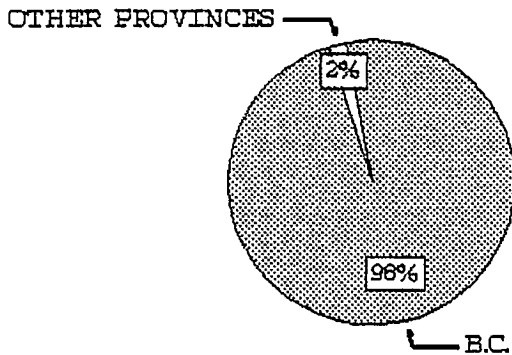
Between 1983 and 1986, the volume of imports of chlorine decreased at an average annual rate of three per cent. The volume declined from 42 351 metric tonnes in 1983 to 32 848 tonnes in 1984. In 1985, it increased by 4 293 tonnes, or 13 per cent compared to 1984 and remained steady in 1986.

During the four-year period, the value of imports increased at an average annual rate of two per cent. In 1984, imports totalled \$6.1 million, a drop of eight per cent from 1983. However, in 1985, the value increased by 16 per cent and remained steady in 1986. The United States has dominated the import market since 1983. Between 1983 and 1986, the average unit price of imports of chlorine has increased from \$156 per tonne to \$186 per tonne.

PART B: CHLORINE

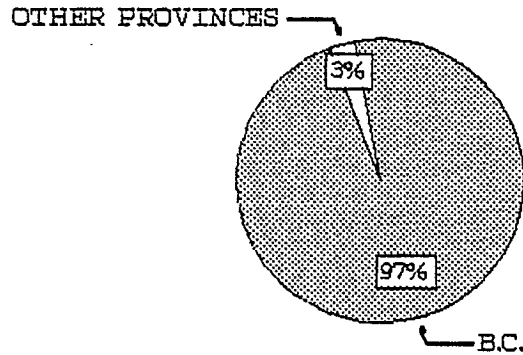
IMPORTS BY PROVINCE OF CLEARANCE - 1986

QUANTITY



100% = 38 014 tonnes

VALUE



100% = \$7.1 million

In 1986, imports of chlorine cleared through the province of British Columbia totalled 37 394 tonnes, or 98 per cent of Canadian imports. Ontario, Saskatchewan, Manitoba and Québec accounted for the other 620 tonnes, or two per cent of total imports.

In 1986, \$6.9 million, or 97 per cent of imports were cleared through British Columbia. Pulp mills accounted for \$6.1 million of imports. The majority was shipped through the state of Washington. The remaining three per cent or \$184 000 was cleared through Ontario, Saskatchewan, Manitoba and Québec.

IMPORTS BY MAJOR FOREIGN COUNTRY OF EXPORT AND PROVINCE OF CLEARANCE - 1986

Foreign Country Of Export	Canada	Nfld.	N.S.	P.E.I.	N.B.	Qué.	Ont.	Man.	Sask.	Alta.	B.C.
UNITED STATES											
Quantity (tonne)	38 014	0	0	0	0	59	234	144	183	0	37 394
Value (\$000)	7 046	0	0	0	0	16	52	38	37	0	6 904
UNITED KINGDOM											
Quantity (tonne)	1	0	0	0	0	0	1	0	0	0	0
Value (\$000)	41	0	0	0	0	0	41	0	0	0	0
TOTAL											
Quantity (tonne)	38 014	0	0	0	0	59	234	144	183	0	37 394
Value (\$000)	7 087	0	0	0	0	16	93	38	37	0	6 904

PART B: CHLORINE

IMPORT MARKET CONCENTRATION - 1985

	<u>Top 5 Importers</u>	<u>Top 12 Importers</u>	<u>All Importers</u>
Value (\$000)	6 685	6 970	7 071
Per Cent of Total Value	95	99	100

The top five importers of chlorine accounted for \$6.7 million, or 95 per cent of total imports. All five companies were manufacturers of paper and allied products or chemicals and allied products.

NOTE: "Top importers" are the known importers with the largest imports by value in 1985.

TYPE AND LOCATION OF THE TOP 12 KNOWN IMPORTERS - 1985
(99% OF TOTAL IMPORT VALUE)

	<u>MANUFACTURERS</u>		<u>WHOLESALEERS</u>		<u>TOTAL</u>	
	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>
Western Provinces	5	6 631	2	117*	7	6 970*
Ontario	4	222	1		5	
Québec	-	-	-	-	-	-
Atlantic Provinces	-	-	-	-	-	-
TOTAL	9	6 853	3	117	12	6 970
Per Cent of 1985 Total Value		97		2		99

* Western Provinces and Ontario aggregated to preserve confidentiality.

In 1985, there were at least 36 importers of chlorine, of which the top 12 companies accounted for \$6.9 million, or 99 per cent of the value of imports. Of those 12 importers, nine were manufacturers. Three were manufacturers of paper and allied products and accounted for \$6.1 million, or 86 per cent of total imports.

PART B: CHLORINE

UNITED STATES' IMPORTS BY COUNTRY OF ORIGIN - 1986

In 1986, the United States Department of Commerce reports U.S. imports of chlorine from all countries amounted to approximately 298 617 tonnes for a value of C\$45.4 million. Canada was the major exporter to the U.S. accounting for 95 per cent of the volume and value, or 282 887 tonnes, valued at \$43.2 million.

<u>U.S. TARIFF SCHEDULE NUMBER</u>	<u>COMMODITY DESCRIPTION</u>	<u>COUNTRY OF ORIGIN</u>	<u>QUANTITY (tonne)</u>	<u>VALUE⁽¹⁾ (C\$000)</u>
415-20-00	Chlorine	Canada	282 287	43.2
		Mexico	14 858	1.6
		Other	<u>872</u>	<u>.6</u>
		TOTAL	298 617	45.4

(1) Conversion factor for U.S. to Canadian dollars = 1.3894 (yearly average, 1986 - source Bank of Canada). Due to the fluctuation of exchange rates throughout the year, values converted at the yearly average rate may differ from export figures published by Statistics Canada.

SOURCE: United States Department of Commerce. U.S. Imports for Consumption (Report No. IM 146, December, 1986).

CANADIAN PRODUCTION

There are at least nine manufacturers of chlorine in Canada. In 1986, Statistics Canada reports that production of chlorine totalled 1 536 325 tonnes, an increase of 7.9 per cent from 1985.

CANADIAN EXPORTS

Statistics Canada reports that exports of chlorine amounted to 270 649 tonnes and were valued at \$52.6 million in 1986. All exports were to the United States.

CANADIAN DOMESTIC MARKET

	<u>1985 (tonne)</u>	<u>1986 (tonne)</u>
Production (shipments) by Canadian Plants	1 401 371	1 536 325
Imports	<u>37 141</u>	<u>38 014</u>
Sub-Total	1 438 512	1 574 339
Exports	<u>257 590</u>	<u>270 649</u>
Apparent Domestic Market	1 180 922	1 303 690
Import Penetration (Imports/Apparent Domestic Market)	3.0%	3.0%

PART B: CHLORINE

CANADIAN TARIFFS

Tariff Item	Description	% of Total Import Value (1985)	Tariff Treatment					
			British Prefer- ential Tariff %	Most Favoured Nation Tariff %	General Tariff %	General Prefer- ential Tariff %	U.K. and Ireland %	
92801-01	Halogens (fluorine, chlorine, bromine and iodine):							
	January 1, 1985	98	3.8	3.8	25	2.5	3.8	
	January 1, 1986		1.9	1.9	25	1.0	1.9	
	January 1, 1987		Free	Free	25	Free	Free	

Tariff Arrangements and Foreign Countries of Export:

Exporting country which qualifies for the Most Favoured Nation tariff treatment: United States
 Exporting country which qualifies for the Most Favoured Nation tariff treatment or U.K. and Ireland:
 United Kingdom

ENQUIRIES CONCERNING TARIFFS SHOULD BE DIRECTED TO THE NEAREST CUSTOMS AND EXCISE OFFICE OR TO:

TARIFF PROGRAMS
 REVENUE CANADA
 CUSTOMS AND EXCISE
 OTTAWA, ONTARIO
 K1A 0L5
 TEL: (613) 954-6903

PART B: CHLORINE

CANADIAN IMPORTERS

Importers of chlorine during 1985, as indicated in this report, are listed below in alphabetical order. This list includes all importers except individuals and a minimal number of importers whose names were not available.

<u>Name</u>	<u>Address</u>	<u>Name</u>	<u>Address</u>
A J Wholesale Pool Supplies Ltd.	Surrey, B.C.	Mackenzie & Feimann Ltd.	Vancouver, B.C.
Aquiform Distributors Ltd.	Richmond, B.C.	Matheson Gas Products Canada Inc.	Calgary, Alta.
Boreal Laboratories Ltd.	Mississauga, Ont.	PPG Canada Inc.	Toronto, Ont.
C I L Inc.	Willowdale, Ont.	Prairie Industrial Chemicals Inc.	Saskatoon, Sask.
CIP Inc.	Vancouver, B.C.	Quatic Chemicals Ltd.	Guelph, Ont.
Canadian Occidental Petroleum Ltd.	Calgary, Alta.	Rolf C Hagen Inc.	Montréal, Qué.
Candel Industries Ltd.	Sidney, B.C.	Sealand Sales Limited	Vancouver, B.C.
Chemonics Scientific Ltd.	Calgary, Alta.	Stearns Catalytic Ltd.	Allentown, PA, U.S.A.*
Dearborn Chemical Company Ltd.	Mississauga, Ont.	Stranco Systems Ltd.	Vancouver, B.C.
Dow Chemical Canada Inc.	Sarnia, Ont.	Union Carbide Canada Ltd.	Toronto, Ont.
Eastern Fish Farm Supply Ltd.	Fredericton, N.B.	Uniroyal Ltd.	Kitchener, Ont.
F M C of Canada Ltd.	Squamish, B.C.	Weldinghouse Inc., The	Thunder Bay, Ont.
Fryston Associates Co. Ltd.	Elora, Ont.	Westar Timber Ltd.	Vancouver, B.C.
Fryston Can Inc.	Mississauga, Ont.	Western Chemicals Limited	Regina, Sask.
Harrisons & Crosfield (Canada) Ltd.	Toronto, Ont.	Weyerhaeuser Canada Ltd.	Kamloops, B.C.
Lyles Water Treatment Ltd.	Regina, Sask.		

* Non-resident importer

DRIE REGIONAL OFFICES

Newfoundland
P.O. Box 8950
Parsons Building
90 O'Leary Avenue
St. John's, Newfoundland
A1B 3R9
Tel: (709) 772-4884

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

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

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

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

Ontario
P.O. Box 98
1 First Canadian Place, Suite 4840
Toronto, Ontario
M5X 1B1
Tel: (416) 365-3737

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

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

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

British Columbia
P.O. Box 49178
Bentall Postal Station
Bentall Tower IV
1101 - 1055 Dunsmuir Street
Vancouver, British Columbia
V7X 1K8
Tel: (604) 666-0434

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

Northwest Territories
P.O. Bag 6100
Precambrian Building
Yellowknife, Northwest Territories
X1A 1C0
Tel: (403) 920-8571

