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# THE PRIMARY PLASTICS INDUSTRY 1954





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#### NOTICE

The annual reports prepared by the Industry and Merchandising Division of the Eureau of Statistics are divided into 3 volumes, as follows: Volume I — The Primary Industries, including mining, forestry and fisheries; Volume II — Manufacturing; Volume III — Merchandising and Services. The volumes are made up of parts, and the parts in turn are subdivided according to the industries or provinces which they comprise.

Volume II consists of the following parts, the first two of which deal with manufacturing as a whole and the balance with the major manufacturing groups.

I - General Review of the Manufacturing Industries, \$1.50

II - The Manufacturing Industries of Canada, (7 sections, as follows:)

Section A. Summary for Canada, 25¢

Section B. Atlantic Provinces, 25¢

Section C. Quebec, 25¢

Section D. Ontario, 25¢

Section E. Prairie Provinces, 25¢

Section F. British Columbia, 25¢

Section G. The Manufacturing Industries of Canada, Regional Distribution, 75¢

III - Foods and Beverages

IV - Tobacco and Tobacco Products

V - Rubber Products

VI - Leather Products

VII - Textile Mills

VIII - Knitting Mills

IX - Clothing

X - Wood and Paper Products

XI - Printing Trades

XII - Iron and Steel Products

XIII - Transportation Equipment

XIV - Non-ferrous Metal Products

XV - Electrical Apparatus and Supplies

XVI - Non-metallic Mineral Products

XVII - Products of Petroleum and Coal

XVIII - Chemicals and Allied Products

XIX - Miscellaneous Manufactures

The present report belongs in Part XVIII, Chemicals and Allied Products. It is punched to permit of filing in a ring binder along with others of the group. The reports in this group are:

A - General Review, 25¢

B-The Acids, Alkalies and Salts Industry, 25¢

C-The Fertilizers Industry, 25¢

D-The Fertilizer Trade in Canada, 25¢

E - The Medicinal and Pharmaceutical Preparations Industry, 25¢

F-The Paints, Varnishes and Lacquers Industry, 25¢

G-The Primary Plastics Industry, 25¢

H-The Soaps, Washing Compounds and Cleaning Preparations Industry, 25¢

I - The Toilet Preparations Industry, 25¢

J-The Vegetable Oils Industry, 25¢

K-The Inks Industry, 25¢

L-The Adhesives Industry, 25¢

M - The Polishes and Cressings Industry, 25¢

N - The Compressed Gases Industry, 25¢

O-The Coal Tar Distillation Industry, 25¢

P-The Miscellaneous Chemical Products Industry, 25¢

# THE PRIMARY PLASTICS INDUSTRY

## 1954

The value of factory shipments in 1954, reported by firms in the Primary Plastics Industry in Canada, amounted to \$58,881,800, an increase of 13.2 per cent over the 1953 total of \$44,541,882.

This industry covers the operations of establishments engaged chiefly in the manufacture of synthetic resins in the forms of sheets, rods, tubes, granules or liquids for use in further manufacture. Not all producers of synthetic resins were included in this group as some concerns made synthetic resins as secondary or minor products or as intermediates for the further use of the producers. Statistics relating to the latter have been included in the appropriate industries which are reviewed in separate bulletins. Separate figures for the production of synthetic resins are not published as many of the individual items were made by only one or two firms. However, a special compilation, which gives a fairly good summary of the total output of synthetic resins as gathered up from all industries, is shown in Table 4. A list of the products made by the factories in this group is shown in the directory which appears at the back of this bulletin.

Note: Figures for value added by manufacture shown in Table 1 prior to 1952 were obtained by subtracting the cost of materials used, including fuel and electricity, from the value of production. In 1952, the gross value of production was replaced by value of factory shipments, f.o.b. plant. As no information on inventory change is available for 1952 and 1953; value added figures for these years were obtained by subtracting from the value of shipments the cost of materials, fuel and electricity. In 1954, information on the value of year-end inventory holdings at plant and plant warehouses was collected as part of the annual Census of Industry and information thus made available was taken into account in calculating the value added figure for 1954.

TABLE 1. Principal Statistics of the Primary Plastics Industry, 1947-1954

Year	Establish- ments	Employees	Earnings	Cost of fuel and electricity at plant	Cost at plant of materials used	Value added by manufacture <sup>1</sup>	Gross selling value of products <sup>1</sup>
	No.	No.	\$	\$	\$	\$	\$
1947	10	1,060	2, 351, 244	203, 221	5, 176, 706	6, 402, 598	11, 782, 525
1948	12	1, 149	2, 770, 529	331, 932	7, 630, 498	8, 478, 317	16, 440, 747
1949	14	1, 286	3, 496, 087	461,318	10,897,184	9, 663, 717	21,022,219
1950	14	1,392	3, 965, 070	603, 388	14,000,584	16, 124, 381	30, 728, 353
1951	16	1,648	5, 402, 853	707, 334	20, 571, 434	18,091,655	39, 370, 423
1952	16	1, 850	6, 505, 167	734, 518	18,774,923	15, 129, 313	34, 638, 754
1953							
Que bec	7	1,509	5, 573, 552	590,629	12, 242, 253	13, 454, 040	26, 286, 922
Ontario	9	557	1, 954, 281	245, 145	10, 888, 512	5, 329, 399	16, 463, 056
Alberta British Columbia	1 2	} 94	388, 585	68, 680	1, 366, 951	356, 273	1, 791, 904
Canada	19	2,160	7, 916, 418	904, 454	24, 497, 716	19, 139, 712	44, 541, 882
1954							
Quebec	6	1,661	6, 522, 757	659, 384	11, 414, 028	14, 134, 330	25, 987, 797
Ontario	12	692	2, 566, 338	405,801	13, 872, 557	7, 927, 550	22, 336, 478
Alberta	2	} 455	2, 101, 558	620,639	5, 686, 977	4, 830, 444	10, 557, 525
British Columbia	2	430	2, 101, 000	020, 039	0,000,311	1, 030, 111	10,001,020
Canada	22	2,808	11, 190, 653	1, 685, 824	30, 973, 562	26, 892, 324	58, 881, 800

Note: Separate statistics for this industry were not compiled before 1947.

1. See footnote to text.

TABLE 2. Inventories 1,1954

Province	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total
	\$	\$	\$	\$
Opening:				
Quebec	1,875,519	528,000	1, 374, 676	3,778,195
Ontario	1, 759, 592	448, 449	1, 988, 954	4, 196, 995
Alberta and British Columbia	858, 412	78, 172	333, 179	1, 269, 763
Canada	4, 493, 523	1,054,621	3, 696, 809	9, 244, 953
Closing:				
Quebec	1,818,549	492, 795	1, 594, 621	3, 905, 965
Ontario	1,771,507	397, 301	1, 858, 384	4,027,192
Alberta and British Columbia	1,177,937	33, 240	913, 714	2, 124, 891
Canada	4, 767, 993	923, 336	4, 366, 719	10, 058, 048

1. Book value of all manufacturing inventories held at plant and plant warehouses.

Note: Beginning with 1954, information on the value of year-end inventory holdings at plant and plant warehouses is being collected as part of the annual Census of Industry. These data were formerly collected by a separate survey. The summarized results for the Primary Plastics Industry for the year under review are shown in the above Table.

TABLE 3. Materials Used in the Primary Plastics Industry, 1953 and 1954

		1953		19	54
Material	H	Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Acetic anhydride	1b.	75,634	10, 261	56,746	7,660
Acid, hydrochloric	1b.		2	67,114	1,644
Acid, sulphuric, 100%	lb.	18, 205, 327	286, 235	27, 333, 406	484, 436
Alcohol, ethyl	Imp. gal.	31,681	25, 479	24, 963	18, 579
Alcohol, isopropyl	lb.	433, 297	24,550	1, 275, 335	33,776
Alcohol, methyl		467,755	171,542	646, 528	255, 120
Benzene	lb.		2	7,806,684	443, 763
Carbon bisulphide	4.4	3,979,524	249,877	4,651,162	288, 794
Chlorine, liquid	4.4	280, 034	8,658	401, 289	12, 759
Cresol		735, 296	112,936	348,684	51,144
Dyes and pigments		_	417, 755	-	378,028
Ethyl acetate	lb.	548, 193	68, 957	822, 829	107,927
Ethylene glycol		2,064,258	412, 238	2, 836, 386	414, 511
Formaldehyde		16, 147, 248	623, 379	17, 629, 518	678, 951
Glycerine		2, 217, 250	940,326	2, 787, 118	956, 320
Oils, vegetable:					
Castor oil	1b.		2	949,110	139,297
Linseed		6,867	8, 757	90,922	112, 564
Soya bean.	10.	2,931,019	421,771	3, 491, 781	524, 924
Other oils		_	31,125		130, 787
Pentaerythritol		607, 858	196, 136	975,078	318, 317
Phenol		9,480,159	1, 434, 183	9, 536, 436	1,392,832
Phthalic anhydride		4, 119, 049	728, 725	4, 647, 261	823, 216
Sodium hydroxide		12, 140, 388	325, 825	15, 287, 096	398, 963
Plasticizers (reported as such)		2,622,926	967, 449	1,999,399	751, 233
Urea crystals		1,059,548	66,408	1,528,663	94, 881
Wood pulp		16, 146, 964	1,498,045	35, 336, 946	3,628,388
Wood flour.		2, 352, 430	53, 921	2, 263, 838	49, 421
Shipping containers and packaging materials		_	787, 250	_	1,129,844
All other materials and process supplies 1		_	14,625,928	-	17, 345, 483
Total	_		24, 497, 716	_	30, 973, 562

Includes acetylene gas, casein, styrene monomer, polyvinyl chloride, etc.
 Not available.

#### Total Production of Synthetic Resins in Canada

Separate figures for the production of synthetic resins are not published as many of the individual items are made by only one or two firms; nor is it possible to classify all producers of synthetic resins to the Primary Plastics group. Alkyd resins, for example, are made in the paints and varnishes industry, vinyl resins in the heavy chemical industry, and so on. The Bureau has made, therefore,

a special compilation which gives a fairly good summary of the total output value as gathered up from all industries, this being shown below. The values cover only the products made for sale as there is no adequate record of the intermediates made for the further use of the producers. The output in 1954 was around \$36,647,000 compared with \$26,251,000 in 1953.

TABLE 4. Total Production of Synthetic Resins1 in Canada, 1948-1954

Year	Selling value at works
	\$
948	11,998,000
949	14, 371, 000
950	19,068,000
951	23,097,000
952	19,100,000
953	26, 251, 000
954	36, 647, 000

<sup>1.</sup> Includes casein-type, vinyls, polystyrene, alkyds, phenol-formaldehyde, urea-formaldehyde, sodium carboxymethylcellulose, polyethylene, cellulose acetate, etc.

TABLE 5. Principal Statistics of the Primary Plastics Industry, Grouped According to Size of Establishments, 1953 and 1954

Establishments reporting a value of factory shipments	Estab- lish- ments	Em- ployees	Earnings	Cost of fuel and electricity	Cost at plant of materials used	Selling value of factory shipments
	No.	No.	\$	\$	\$	\$
1953						
\$50,000 to \$99,999. \$100,000 to \$199,999.	1 2	} 85	325, 059	62,680	285, 472	439, 561
\$200,000 to \$499,999. \$500,000 to \$999,999.	4	} 191	580,604	114, 172	1,263,476	1,743,175
1,000,000 to \$4,999,999. 55,000,000 and over lead offices	8 3	674 1,045 165	2,515,239 3,791,067 704,449	221,659 505,943	9, 732, 369 13, 216, 399	16, 842, 941 25, 516, 205
Totals	19	2,160	7, 916, 418	904,454	24,497,716	44,541,882
1954						
Inder \$10,000	1	)				
\$50,000 to \$99,999. \$100,000 to \$199,999. \$200,000 to \$499,999.	1 2 2	73	208,702	36,691	641,773	1,064,167
\$500,000 to \$999,999. 1,000,000 to \$4,999,999.	3 9	264 854	1,127,627 3,454,742	222, 087 421, 693	1,186,557 11,860,964	2, 050, 553 18, 692, 841
5,000,000 and over	4	1,362 255	5, 284, 220 1, 115, 362	1,005,353	17, 284, 268	37, 074, 239
Totals	22	2,808	11, 190, 653	1, 685, 824	30, 973, 562	58, 881, 800

TABLE 6. Employees and Their Earnings in the Primary Plastics Industry, 1953 and 1954

Province	Number of employees					Earnings			
	Supervisory and office		Production workers		Total	Supervisory	Production	Total	
	Male	Female	Male	Female		and office	workers		
1953						\$	\$	\$	
Quebec	419 122 30	156 43 8	884 379 56	50 13	1,509 557 94	2,420,631 651,726 177,420	3, 152, 921 1, 302, 555 211, 165	5,573,552 1,954,281 388,585	
Canada	571	207	1,319	63	2, 160	3, 249, 777	4, 666, 641	7, 916, 418	
Quebec	491 141 137	195 57 45	921 469 266	54 25 7	1,661 692 455	3, 200, 787 813, 987 824, 192	3,321,970 1,752,351 1,277,366	6,522,757 2,566,338 2,101,558	
Canada	769	297	1,656	86	2,808	4, 838, 966	6, 351, 687	11, 190, 653	

TABLE 7. Production Workers, by Months, 1953 and 1954

Month		1953		1954		
	Male	Female	Total	Male	Female	Total
	No.	No.	No.	No.	No.	No.
Ja nuary	1,136	58	1, 194	1,608	66	1,674
February	1,126	59	1,185	1,628	80	1,708
March	1, 160	59	1,219	1,584	76	1,660
April	1,172	56	1,228	1,627	74	1,701
May	1,225	60	1, 285	1,670	79	1,749
June	1,327	61	1,388	1,721	91	1,812
fuly	1,338	63	1,401	1,712	98	1,810
August	1,378	72	1,450	1,705	90	1,795
September	1,428	71	1,499	1,683	88	1,771
October	1,487	70	1,557	1,666	90	1,756
November	1,536	70	1,606	1,637	96	1,733
December	1,542	65	1,607	1,644	97	1,741
Average	1,319	63	1,382	1,656	86	1,742

TABLE 8. Capital and Repair Expenditures in the Primary Plastics Industry, 1950-1954

	Capital ex	Capital expenditures		Repa: maintenance	ir and expenditures		Total capital
Year	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Sub-total	and repair expenditures
				\$'000			
1950	1,404 1,549 4,128 1,273 351	3,606 4,365 7,869 13,267 2,558	5,010 5,914 11,997 14,540 2,909	278 460 242 227 208	1,358 1,349 711 1,065 1,133	1,636 1,809 953 1,292 1,341	6,646 7,723 12,950 15,832 4,250

1. Preliminary.

TABLE 9. Imports into Canada of Plastics and Manufactures Thereof, 1953 and 1954

Item	Value		
Item	1953	1954	
	\$	\$	
Casings, synthetic, for meats and meat products	415, 716	529,976	
Esters, or ethers, or combinations thereof, of cellulose, without admixture	1, 221, 520	1,359,360	
Esters, or ethers, or combinations thereof, of cellulose, compounded with other materials, for moulding, casting, extruding or pressing	930, 303	472, 294	
Foamed and expanded cellulose plastics in blocks, boards, granules or powder	9,149	39, 097	
Compositions of esters or ethers of cellulose with other materials, n.o.p	15, 091	35, 330	
Cellulose plastic plates, sheets, strip, film, blocks, bars, rods, tubes or other primary shapes	1,211,077	1,148,279	
Reinforced or supported cellulose plastic plates, sheets, strip, tubing, blocks, bars, rods, in which is incorporated a layer of paper, fibreboard or textile fabric, or a core of fibres, whether matted or otherwise	471, 461	447, 064	
aminated moulded plastic products having cellulose plastics as the chief binding agents	196, 725	181,559	
Cellulose nitrate sheets with turned edges, for the production of printers' engra- vings	76, 319	107, 980	
Manufactures of cellulose plastics, n.o.p,	1, 433, 714	1,518,813	
Manufactures of regenerated cellulose, n.o.p.	1,414,928	1, 213, 330	

TABLE 9. Imports into Canada of Plastics and Manufactures Thereof, 1953 and 1954 - Concluded

	Value		
Item	1953	1954	
	\$	\$	
Synthetic resins without admixture	11, 540, 397	12,815,395	
Synthetic resins in solutions or solvents	4, 404, 546	3,608,833	
Synthetic resins compounded with other materials for moulding, casting or extruding, including uncured preforms or blanks for compression moulding	3, 458, 538	4,065,823	
Foamed and expanded synthetic resins in logs, blocks, boards, flakes, granules or powder	223,758	347, 075	
Synthetic resin compositions, n.o.p.	513,773	1, 158, 871	
Synthetic resins or protein plastics in bars, rods, sheets, plates, strip, film, tubing or other primary shapes, n.o.p., whether coated or decorated or not	5, 770, 727	6, 247, 640	
Reinforced or supported synthetic resin plates, sheets, strip, tubing, blocks, bars, rods, in which is incorporated a layer of paper, fibreboard or textile fabric, or a core of fibres, whether matted or otherwise	899, 505	1,121,769	
Laminated moulded plastic products having synthetic resins as the chief bonding agents	491, 799	551,429	
Manufactures, n.o.p., of synthetic resins, or of protein plastics	8, 829, 805	9, 329, 697	

TABLE 10. Exports from Canada of Synthetic Resins and Synthetic Resin Products, 1953 and 1954

Item	1953	1954
Synthetic resins, n.o.p	2, 935, 848	5,343,878
Synthetic resins, manufactures of	1,110,754 736,084 25,425,300 7,378,571	3,749,155 804,754 24,579,300 7,488,917

TABLE 11. Exports of Synthetic Resins and Plastics from the United States to Canada, 1954

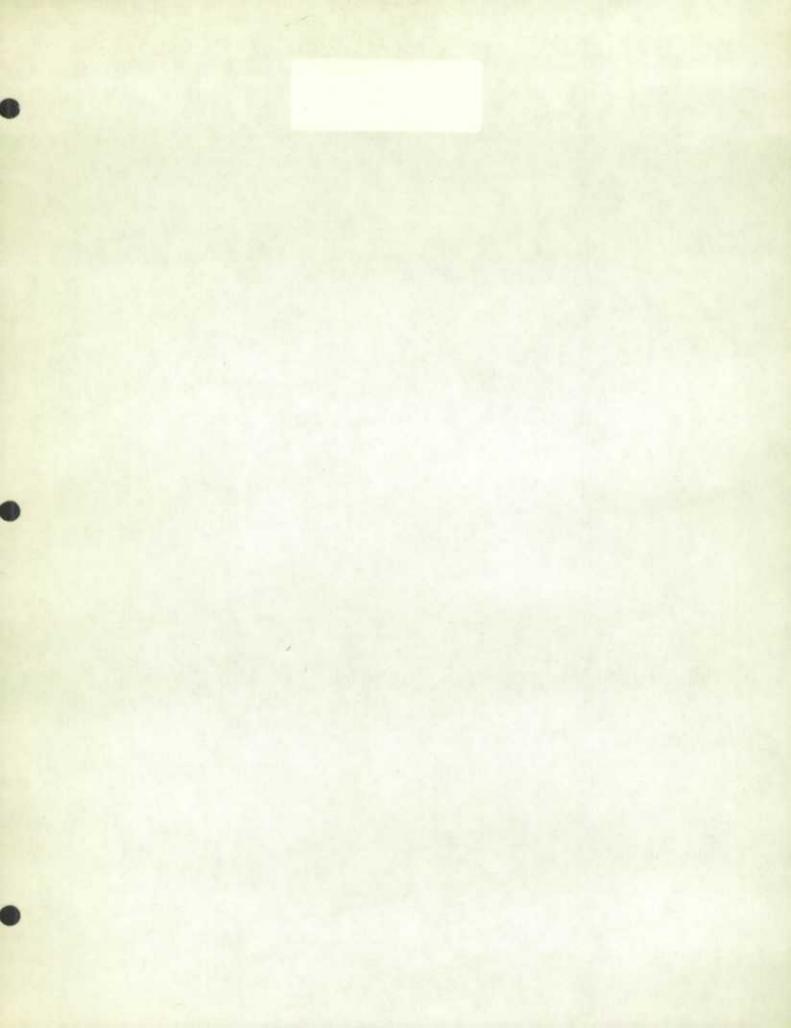
(From the "United States Exports of Domestic and Foreign Merchandise")

Item	Quantity	Value
	Pounds	\$
Ester gums, except laminated	3, 393, 621	657, 894
tyrene polymer and copolymer resins, 60 per cent or more styrene	3, 978, 070	1, 231, 285
alkyd resins	9, 407, 339	2, 310, 355
inyl and vinyl copolymer resins, uncompounded	7, 661, 628	2, 533, 844
inyl and vinyl copolymer resins, compounded	1, 184, 161	489, 655
inyl and vinyl copolymer resins, semi-finished	392, 706	378, 426
inyl resin scrap in any form	179, 883	42, 990
ar acid resins, powder, flake, lump, etc.	9, 245, 124	2, 139, 257
rea-formaldehyde, melamine-formaldehyde and other amine resins	6, 510, 084	
esins, n.e.c., unfinished and semi-finished		2,078,939
Silm and cheating anythetic seein	14, 923, 852	5, 154, 262
'ilm and sheeting, synthetic resin	6, 227, 933	4, 904, 126
henol and cresol-formaldehyde laminated sheets, plates, etc.	720, 511	798, 729
aminated and moulded-laminated plastics, n.e.c.	1, 222, 648	973,622
ellulose ethers and derivatives in all unfinished forms	137, 455	116, 303
ellulose nitrate scrap and film scrap.	17, 231	5,418
ellulose nitrate sheets, rods, tubes and similar forms	155, 407	238, 793
ellulose acetate moulding and extrusion compositions	1, 153, 636	685, 411
ellulose acetate plastics for other uses, in unfinished forms	2, 418, 503	1,934,350
ellulose acetate plastic scrap in any form	43,026	8, 317
egenerated cellulose, excluding rayon, in rolls and sheets	266, 486	225, 538
ulcanized fiber sheets, rolls and other shapes made therefrom	1,082,966	463, 490

### List of Firms in the Primary Plastics Industry, 1954

Name and location of plant	Principal product made
Quebec:	
Canadian Plastics Limited, 1850 St. Antoine St., Montreal	Synthetic resin (casein type)
Canadian Resins & Chemicals Limited, Cedar Ave.,	
Shawinigan Falls	Synthetic resin (vinyl chloride type); vinyl film, sheeting and granular; dioctyl phthalate; 2 ethyl hexanol; vinyl chloride monomer
Dupont Company of Canada Limited, Shawinigan Falls	Cellulose film("Cellophane"); cellulose sponges; polythene film and tubing
Monsanto (Canada) Limited, 425 St. Patrick St., Ville La Salle	Synthetic resin (polystyrene and vinyl chloride types)
Panelyte Division, St. Regis Paper Co. (Canada) Ltd., Montcalm Blvd., St. Jean	Synthetic resin (for own use) (phenol-formaldehyde type); laminated plastic sheets, rods and tubes; door panels
Reichhold Chemicals (Canada) Limited, Ste. Therese de Blainville	Synthetic resin (phenol-formaldehyde and urea-formaldehyde types)
Ontario:	
Bakelite Company, Division of Union Carbide Canada	
Limited, Belleville	Synthetic resins (phenol-formaldehyde and urea-formaldehyde types); phenolic impregnated and laminated sheets; formaldehyde
Canadian General Electric Co.Ltd., 940 Lansdowne Ave.,	Cupthatic reals (alked type), inculating variab
Dow Chemical of Canada Limited, Sarnia	Synthetic resin (alkyd type); insulating varnish Synthetic resin (polystyrene type); latex; styrene
Goodrich, B.F., Chemical Co., 251 King St. W., Kitchener	Synthetic resin(compounded only)(vinyl chloride type); vinyl film and tape
Kayson Rubber & Plastics Limited, 144 Water St. S., Galt	Synthetic resin (compounded only) (cellulose acetate, polystyrene and vinyl chloride types)
North American Rubber & Plastics Co., Lakeview	Synthetic resin (compounded only) (polyvinyl chloride type)
Polyresins Limited, Beechwood Drive, Torornto	Polyvinyl resinous emulsions
Reichhold Chemicals (Canada) Limited, 1919 Wilson Ave., Weston	Synthetic resin (alkyd type)
Standard Chemical Co. Ltd., Longford Mills	Carboxymethylcellulose
T C F of Canada Ltd., Cornwall	Cellulose film
Varcum Chemical Corp. (Canada) Ltd., St. David St.,	
Lindsay	Synthetic resin (compounded only) (phenol-formaldehyde type)
Woburn Chemicals Limited, 184 Laird Drive, Leaside	Synthetic resin (alkyd type); processed oils
Alberta:	
Canadian Chemical Co. Ltd., Box 99, Edmonton	Synthetic resin (cellulose acetate type)
Canadian Industries (1954) Limited, P.O. Box 428, Edmonton	Synthetic resin (polyethylene type)
British Columbia:	
American Marietta Company of Canada Limited, Keary St., New Westminster	Synthetic resin (phenol-formaldehyde type)
Reichhold Chemicals (Canada) Limited, Foot of Douglas St., Port Moody	Synthetic resins(phenol-formaldehyde, wea-formaldehyde and protein types)





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