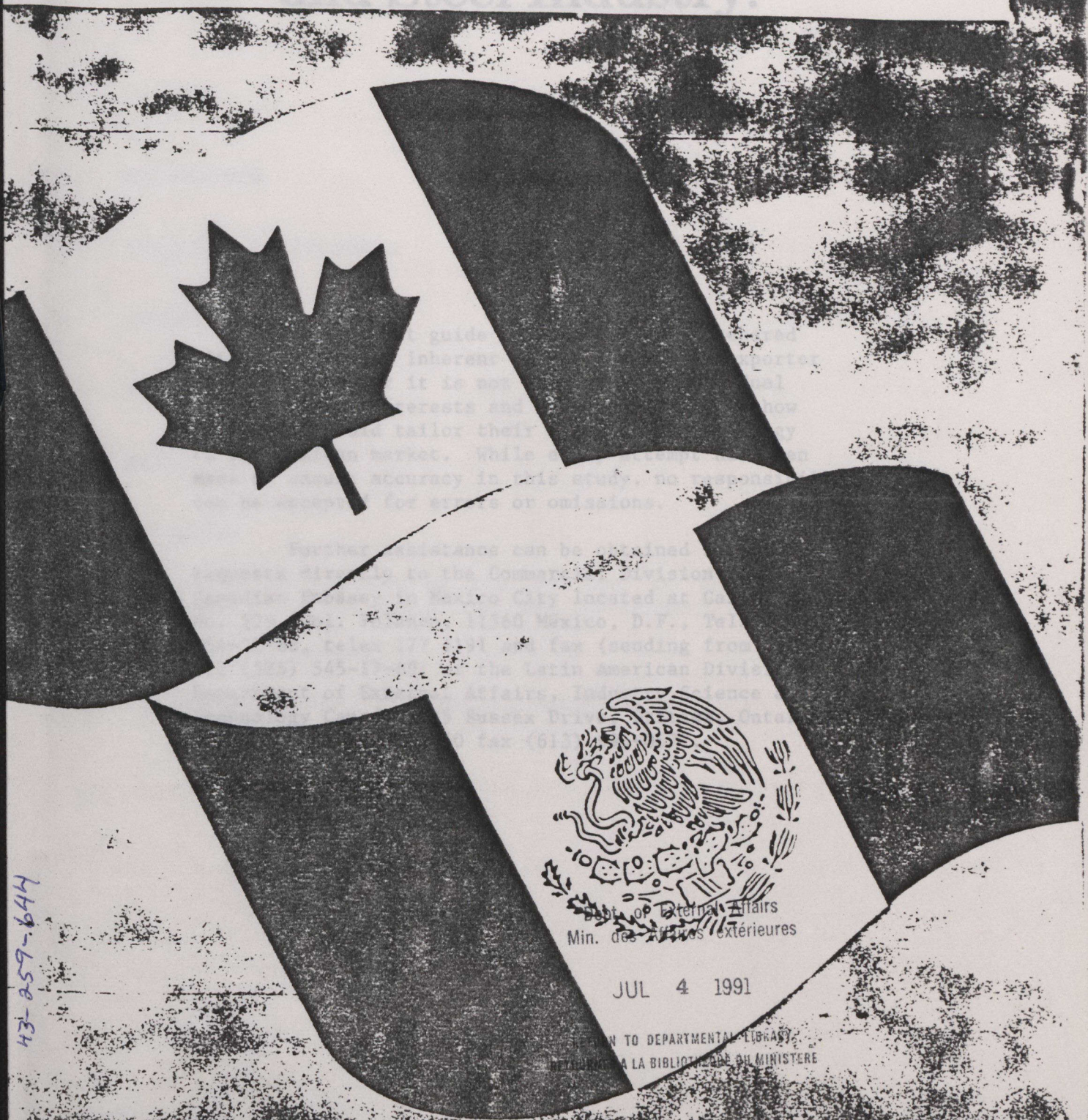
Market Study on the Mexican Iron and Steel Industry.



INFORMATION FOR CANADIAN BUSINESSMEN
PREPARED BY THE COMMERCIAL DIVISION
CANADIAN EMBASSY, MEXICO

Market Study on the Mexican Iron and Steel Industry.

This market guide booklet has been prepared with the problems inherent to the initiating exporter in mind. However it is not exhaustive; individual circumstances, interests and needs will dictate how companies should tailor their approach and strategy to the Mexican market. While every attempt has been made to ensure accuracy in this study, no responsibility can be accepted for errors or omissions.

Further assistance can be obtained by addressing requests directly to the Commercial Division of the Canadian Embassy in Mexico City located at Calle Schiller No. 529, Col. Polanco, 11560 México, D.F., Telephone 254-32-88, telex 177 1191 and fax (sending from Canada) 011 (525) 545-17-69; or the Latin American Division Department of External Affairs, Industry Science and Technology Canada, 125 Sussex Drive, Otttawa, Ontario, K1A 0G2. Phone 9950460 fax (613) 996-0677.

Market Study on the Mexican Iron and Steel Industry.

MARKET STUDY ON THE MEXICAN

IRON AND STEEL INDUSTRY

INDEX

1. BACKGROUND

Mexico's iron reserves represent approximately 0.15% of the world's total reserves, or 700 million tons, and are found in 240 deposits within 21 states. The three largest, Las Truchas (Michoacán), Peña Colorada (Colima) and Cerro de Mercado (Durango), account for 65% of total reserves. All of these are incorporated to the national mining reserves and are considered property of the nation.

After having been under private ownership between 1907 and 1965, Siderúrgica Las Truchas, S.A. was created in 1969 with a 50% participation of the federal government, 25% of Nacional Financiera, a government owned development bank, 12.5% of Altos Hornos de México (AHMSA) and 12.5% of Ing. Bernardo Quintana. In 1971 the company was called Siderúrgica Lázaro Cárdenas - Las Truchas and a Mex$6,200 million pesos investment was authorized to install a major processing plant and the necessary infrastructure at the Las Truchas site.

Peña Colorada was not explored until 1957. In 1967 the Consorcio Minero Peña Colorada S.A. was created with the participation of AHMSA, Fierro Esponja, Tubos de Acero de México (TAMSA), Fundidora de Fierro y Acero Monterrey and the federal government. In 1968, the company was renamed (by including Benito Juárez in the name) and its capital was increased.

Cerro del Mercado is the oldest known deposit and was presumably already exploited in the 16th century. During the 19th century, a series of owners and companies took advantage of these deposits, and in 1900 the Compañía Fundidora de Fierro y Acero de Monterrey, S.A. was created and started operations in 1903.

Until recently, the Mexican steel industry was composed of five fully integrated steel plants, which accounted for 86% of total national production, and several smaller semi-integrated and non-integrated manufacturers. Of the five large companies, three were included in the government owned SIDERMEX (Mexican Steel) complex: Compañía Fundidora Monterrey (FMSA - 1903), Altos Hornos de México (AHMSA - 1942) and Siderúrgica Lázaro Cárdenas - Las Truchas (SICARTSA - 1976). Hojalata y Lámina (HYLSA - 1946) and Tubos de Acero de México (TAMSA - 1955) are the two fully integrated, privately owned producers.

In a major effort to restructure the parastate industry, and in particular the government owned steel industry, the Mexican government decided to reduce its participation in the sector by closing, merging, transfering or selling several companies. In 1986 Fundidora Monterrey was closed down, since it had major problems of technological obsolescence and therefore high production costs, which were translating into yearly losses. Government participation was also reduced in the associated companies, involved in other activities, such as distribution, transportation, real estate,

1. BACKGROUND

machinery manufacture, etc., many of which were unrelated to the steel industry. Only the companies producing raw materials (iron, coal, ferroalloys and refractories) were kept.

At the same time, in order to offset some of the reduction in production brought about by this closure, the SICARTSA II project was continued, allowing for modernization and increased efficiency of existing production and investment, while the modernization of AHMSA also advanced, with the help of a $700 million US dollar World Bank loan to SIDERMEX in 1989. During 1984 and 1989 a total of two billion dollars were invested in the parastate steel industry

Within the sector's reconversion program, on March 7, 1990, the government officially announced the deincorporation of AHMSA and SICARTSA on the grounds that government involvement in the steel industry is no longer a priority, since both private and international steel production can presently cover existing domestic demand at competitive prices. This is due to a general decrease in demand for steel in favor of other materials (plastic, aluminum, etc.) together with the reduction in the scale of production operations, which has allowed smaller firms to enter the market with smaller investments than were previously required. Because resources available to the federal government are limited, they are to be used in priority social projects and are infufficient to undertake the necessary investments to modernize the steel industry. The conditions under which the sale are to take place are that whoever acquires the firms should have an investment program and the necessary resources to undertake it in order to complete the modernization project begun by the government; and that worker's right in the industry be respected.

On August 2, 1990 the final sales decision was officially published, instructing the Ministry of Finance and Public Credit to determine which local bank is to be responsible for the sale. Japanese sources have reported that Nippon Steel Co. has been negotiating with the Mexican government to purchase SICARTSA, in which Japan has already invested $930 million US dollars since 1982. Other companies reported to be interested are Kobe Steel and Sumitomo Metal Industries, both of which have joint ventures with NKS and Productora Mexicana de Tubería, both related to the steel industry. Other companies are the Mexican Alfa group, other local firms and companies from West Germany and England.

2. ECONOMIC ENVIRONMENT

With the objective of reducing the inflation rate, the Mexican authorities implemented a stabilization program, called the Economic Solidarity Pact, which features traditional austerity measures, entailing tight fiscal and monetary policies and unorthodox measures, such as price, wage and exchange rate controls. This program has been the cornerstone of Mexico's

economic policy over the past three years and has resulted in a drastic reduction of the inflation rate, from an annual rate of 159% in 1987 to 52% in 1988 and 19.7% in 1989. An 18% inflation rate is expected in 1990. Along with the objective of consolidating the progress made in price stabilization, Mexico's macroeconomic policy in 1990 aims to reaffirm gradual and sustained economic recuperation, basically by establishing the necessary conditions to encourage national and foreign investment. In 1991, the Mexican authorities expect to reach an inflation rate equivalent to international levels and to relax price controls.

Mexico's gross domestic product (GDP), after increasing 3.7% and 2.7% during 1984 and 1985 respectively, diminished by 3.5% in 1986. In 1987, it increased a moderate 1.5% and an additional 1.1% in 1988. Domestic economic activity recovered for the third consecutive year in 1989 with a growth rate of 2.9% to reach $200 billion (1). With an 84.5 million population, per capita GDP is estimated at Cdn$2,550. During the 1990-1994 period GDP is expected to maintain an average annual growth rate of 2%-3%. In disagregated terms, this represents an annual growth rate of 5.3% in the manufacturing sector, 2.3% in the services sector and only 0.6% in the agricultural sector. After several years of stagnation, public investment will grow 5% and private investment will also rise 5%.

In an effort to revitalize and open the Mexican economy, the Mexican Government undertook a series of structural changes, including the accession to the General Agreement on Tariffs and Trade (GATT) on August 24, 1986 leading to an extensive trade liberalization process: import permits were eliminated on all but 325 of the total 11,950 tariff items based on the recently adopted Harmonized System. Official import prices are no longer applicable, nor the 5% export development tax, and import duties were lowered from a maximum of 100% in 1982 to 20% in January 1988. The automotive and computer industries are also being opened up, through the elimination of prior import permits, to allow free entry of products in these industries.

According to official data from the Mexican Secretariat of Commerce and Industrial Development (SECOFI), Mexico's trade balance in 1989 dropped to a $644.8 million deficit, down from a surplus of $1.75 billion in 1988 and $8.4 billion in 1987. Total exports increased 10.7% in 1989, from $20.6 billion in 1988 to $22.8 billion. Imports increased 23.9% from $18.9 billion to $23.4 billion, having already increased 48% from $12.2 billion in 1988. During 1989, imports of consumer products grew 82%, while those of intermediate goods increased by 17% and capital goods by 18%.

Total Mexican imports from Canada increased 24% in 1989 and amounted to Cdn$603 million, while total Mexican exports to Canada were valued at Cdn$1,698 million. Mexico and Canada have

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1. Note: All values in this report, unless otherwise stated (Mexican pesos, Mex$, Canadian dollars, Cdn$, etc) are quoted in United States dollar equivalents.

traditionally been strong trading partners. According to Mexican figures, in 1989, 1.9% of Mexico's imports came from Canada, while 1.2% of its exports were to Canada. This makes Canada Mexico's fifth largest exporter and sixth largest importer.

Such figures support the possibility expressed by Mexican and United States authorities of creating a North American free market. The negotiations of a free market agreement between the United States and Mexico are underway. With its coming into effect, and with the existing Canada-United States agreement, the feasibility of an open market across North America is probable.

3. MARKET ASSESSMENT

Total apparent consumption of equipment for the iron and steel industry amounted to $82.8 million in 1988, reflecting a 16% increase over 1987 levels. This was brought about by a general economic recovery and favorable international steel prices, which allowed the small foundries and steel mills to purchase new equipment to substitute obsolete machinery. No major projects were undetaken by the large integrated firms, in particular the Sidermex group, since it is in the process of being restructured. Its investments are limited to maintaining existing capacity through maintennace and repair projects. The absence of major investments was felt in a decrease of the equipment market to $55 million in 1989, as the smaller companies are reducing their level of purchases. Apparent consumption of equipment for the iron and steel industry is expected to increase slightly in 1990 and 1991 but, as the sale of Sidermex is completed, major investments are expected to be made between 1992 and 1994, placing total purchases at $99 million by the latter year.

TABLE 1
APPARENT CONSUMPTION OF EQUIPMENT FOR THE IRON AND STEEL INDUSTRY
($000 dollars)

	1987	1988	1989	1994p
Production	24,609	26,275	27,326	37,326
+ Imports	47,936	57,954	30,787	65,583
- Exports	999	1,438	3,067	4,114
TOTAL	**71,546**	**82,791**	**55,046**	**98,795**

Imports have played a paramount role in this industry. Although no reliable figures exist for the national production of machinery and equipment for this industry, based on trade interviews it is estimated that the imported share of the market fluctuates between

55% and 70%, depending on economic and trade conditions and the specific equipment needs. With Mexico's trade liberalization policies, imports increased significantly, from $47.9 million in 1987 to $58 million in 1988, but dropped again to $30.8 million. The following table shows imports by category for the 1987-1989 period. It is interesting to note that almost all categories experienced a reduction in 1989, in particular casting equipment and other foundry equipment, parts for rolling mills and furnaces, while rolls for rolling mills increased significantly.

TABLE 2
IMPORTS OF EQUIPMENT FOR THE IRON AND STEEL INDUSTRY
($000 dollars)

	1987	1988	1989
Converters	-	612.2	3.7
Ingot moulds & ladles	1,013.1	746.3	1,489.1
Casting machines	21,691.2	9,752.7	2,855.5
Other moulding equipment	468.3	151.6	466.4
Parts	4,359.1	1,027.1	80.9
Tube mills	1.2	6.8	1,354.7
Hot or hot/cold rolling mills	405.4	3,773.8	723.7
Cold rolling mills	0.4	43.1	177.5
Rolls	4,791.7	1,265.8	10,527.6
Parts for rolling mills	6,747.5	26,860.7	7,640.1
Furnaces	7,345.5	6,406.0	4,615.8
Parts furnaces	1,095.4	5,356.1	232.3
Slag transporters	17.6	1,951.7	619.3
TOTAL	**47,936.4**	**57,953.9**	**30,786.6**

Source: Import data by Secretaría de Comercio y Fomento Industrial

There are traditionally large year to year fluctuations in imports because the large expansion projects occur irregularly, depending on general economic conditions and availability of financing. At the same time, the long useful life of the equipment extends its purchasing cycle and translates into important purchases of parts for replacement, maintenance or upgrading of existing technology.

TABLE 3
CANADIAN TRADE WITH MEXICO OF EQUIPEMNT FOR THE IRON AND STEEL INDUSTRY
(Cdn$000 dollars)

	1988 IMPORTS FROM MEX	1988 EXPORTS TO MEX	1989 IMPORTS FROM MEX	1989 EXPORTS TO MEX
Furnaces				9
Parts for furnaces		239		241
Converters				47
Casting machines				63
Parts for moulds, etc.		88		51
Rolling mill rolls	231			
Parts for rolling mills		9		26
Metal foundry boxes		3		
TOTAL	**231**	**339**	**0**	**437**

Source: Statistics Canada - International Trade Division

Overall, the U.S. is the leading supplier of machinery and equipment for the iron and steel industry, with a 39% import market share in 1989. Brand loyalty is important in this industry because compatibility among various brands is usually limited and often causes users to be tied to a certain supplier throughout the length of the useful life for that equipment. Other major suppliers include Italy (16%), West Germany (14%), the Soviet Union (6%), Spain (6%), Japan (4%), Great Britain, France, Austria, Switzerland, Finland and Canada. Important competitive factors in this market are technological sophistication, equipment quality and reliability, price and financing terms, availability and speedy supply of parts for repair, maintenance or expansion, and a presence in the market to adequately provide for after-sales and engineering services.

4. END USERS

Mexico's steel production industry includes all five stages of production typically found in the operations of major, fully integrated, steel producers in other countries:
- concentration of iron ore and production of coke from coal;
- production of primary iron or fusion;
- production of pig iron and sponge iron;
- production of steel for lamination, casting or smelting;
- production of the final product in semi-finishing or finishing mills.

TABLE 3

CANADIAN TRADE WITH MEXICO OF EQUIPMENT FOR THE IRON AND STEEL INDUSTRY

(Cdn$000 dollars)

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Source: Statistics Canada - International Trade Division

Firms in the industry are divided into three groups, according to the degree of transformation employed:
- Integrated producers carry out all five production processes;
- Semi-integrated firms begin with scrap or pig iron, fabricate raw steel and produce finished (rolled) products;
- Mill rollers produce finished products from steel ingots.

The Mexican steel industry is composed of four large, fully integrated manufacturers, 23 semi-integrated firms and 44 mill rollers with a total installed capacity of 11.6 million metric tons of steel, of which 58% are government owned. Capacity utilization in 1989 was 67%. Mexico is the second largest steel producer in Latin America after Brazil and the world's 21st. Total employment in the industry is of 62,000 persons, 43,000 blue collar workers and 19,000 employees. The sector's GDP accounts for 1.2% of total GDP and 5% of manufacturing GDP.

Total raw steel production reached an all time high of 7.85 million tons in 1989, reflecting a one percent increase over 1988 levels and a 12% increase over its all time low during the decade of 6.9 million tons in 1983. Steel production increased despite strikes and other problems which shut down activities at several plants, due to a general economic recovery and growing exports at favorable world prices. During the 1990 January-July period, total steel production reached slightly over five million tons, reflecting a 5.8% increase over the previous year's production for the same period. CANACERO forecasts a total steel production of 9.2 million tons for 1990, based on a major increase in the output of SICARTSA II, which is expected to produce one million tons.

TABLE 4
MEXICAN STEEL PRODUCTION
(000 tons)

	1985	1986	1987	1988	1989
Steel	7,399	7,225	7,642	7,779	7,851
Pig iron	3,595	3,737	3,712	3,678	3,230
Sponge iron	1,500	1,420	1,551	1,686	2,148
FERROALLOYS	230	239	267	272	279
-Ferromagnesium	154	156	161	165	168
-Ferrosilicon	28	18	18	17	9
-Siliconmanganese	39	61	80	80	99
-Ferrochromium	6	3	6	9	3
-Other alloys	3	1	2	1	0

Source: Cámara Nacional del Hierro y el Acero (CANACERO)

Within the gradual modernization of Mexico's steel industry, an important feature is the displacement of obsolete technogies with more state-of-the-art technology. In this sense, open hearth production (Siemens Martin) has been reduced from 19% of total production in 1980 to only 10% in 1989. Electric arc furnaces (EAF) are utilized for 52% of production and basic oxygen furnaces (BOF) for the remaining 38%. It is worth noting, however, that the latter were expected to contribute with an additional 200 thousand tons to total steel production, but were the most affected by the labor unrests. During 1990, BOF production has increased 11.4%, EAF 5.5%, while open hearth production decreased 13.3%. Their participation in total production is EAF 51%, BOF 41%, open hearth 8%.

Mexico will also be relying increasingly on natural gas and direct reduction technology, rather than on coke and coal consumption in the future. In 1989, of total basic materials, 41% were produced through direct reduction processes (sponge iron), reflecting a 32% increase, while blast furnace produced pig iron decreased 12% to a 59% participation, as compared to 69% in 1980. During the first seven months of 1990, sponge iron production increased 7.5% to 1.4 million tons and pig iron grew 7.3% to 2.1 million tons.

The four fully integrated steel plants accounted for 86.5% of total national production and 65% of employment in the industry. Of the four large companies, two are included in the government owned SIDERMEX (Mexican Steel) complex: Altos Hornos de México (AHMSA) and Siderúrgica Lázaro Cárdenas - Las Truchas (SICARTSA). Hojalata y Lámina (HYLSA) and Tubos de Acero de México (TAMSA) are the two fully integrated, privately owned producers and account for 30% of total production and 35% of production of the fully integrated firms. The following table shows production by firm between 1985 and 1989.

TABLE 5
TOTAL STEEL PRODUCTION BY FIRM
(000 tons)

	1985	1986	1987	1988	1989
AHMSA	2,603	2,868	3,086	3,083	2,844
SICARTSA	613	1,192	1,190	1,131	1,336
FMSA	943	254			
TOTAL SIDERMEX	**4,159**	**4,314**	**4,276**	**4,214**	**4,180**
HYLSA	1,671	1,582	1,662	1,710	1,810
TAMSA	279	233	485	540	469
NON INTEGRATED	1,290	1,096	1,219	1,315	1,381
TOTAL PRIVATE	**3,240**	**2,911**	**3,366**	**3,565**	**3,660**
GRAND TOTAL	**7,399**	**7,225**	**7,642**	**7,779**	**7,840**

Source: Cámara Nacional del Hierro y el Acero (CANACERO) 1985-1988
Secretaría de Energía, Minas e Industria Paraestatal 1989

Forgings and castings reached a total production level of 100,000 tons in 1989, up 14% over the 88,000 tons of 1988. The production of primary finished products -rolled flat plate, rolled non-flat plate and seamless pipe- amounted to 5.9 million tons in 1989, reflecting a 5.7% decrease compared to 1988. It is interesting to note that rolled flat plate products have decreased their overall participation from 48% in 1980 to 43% in 1989, in favor of rolled non-flat plate.

Production of rolled flat plate products has steadily increased at a 4.5% average annual rate since 1986 but has not yet been able to recover its 1985 level of 2.8 million tons. Rolled flats include sheet plate (21%), hot rolled plate (33%), cold rolled plate (40%) and tin plate (6%). Rolled flat plate is exclusively manufactured by AHMSA, which accounts for 61% of production, and HYLSA (39%). National demand for rolled flats has increased at a faster pace than production, at an average rate of 11.3% between 1986 and 1989, which has translated into rapidly increasing imports, from 197,000 tons in 1987 to 445,000 tons in 1989, while exports have decreased from 386,000 tons in 1988 to 262,000 in 1989.

Rolled non-flat plate production reached 3 million tons in 1989, 10% less than in 1988 because of a production halt in the months of June, September and October due to labor problems. Rolled non-flats include corrugated rods (48%), wire rod (28%), solid bars (10%), commercial shapes (7%) and structural shapes (7%). Rolled non-flat plate is manufactured by the non-integrated companies (40%) - basically micro and mini steel companies (38%) and rolling mills (2%)- SICARTSA (25%), HYLSA (20%) and AHMSA (15%). Total consumption of rolled non-flats increased 10.3% in 1987, slightly decreased in 1988 and grew by 2.1% in 1989, averaging a higher growth than production for the same period. This deficit was met both by increased imports, from 100,000 tons in 1987 to 140,000 in 1989, and by reduced exports, from 452,000 in 1987 to 354,000 in 1989.

Seamless pipe manufacture has shown a very dynamic growth of 20.2% between 1986 and 1989 as a result of growing exports. The total production of seamless pipe, amounting to 355,000 tons in 1989, is exclusively made by TAMSA. Apparent consumption of seamless pipe has decreased at an average annual rate of 14.5% since 1985, due to a slack demand by the petroleum and construction industries. Exports have therefore increased from 43,000 tons in 1986 to 245,000 tons in 1989, while imports decreased from 49,000 tons in 1988 to 29,000 in 1989.

In the derived steel products subsector, a total production of 1.5 million tons was reached in 1989, reflecting a 1.4% decrease as compared to 1988. This was due to a reduced production of galvanized plate and tin plate, while seamed pipe and wire production increased in 1989.

TABLE 5
TOTAL FINISHED AND DERIVED STEEL PRODUCTION
(000 tons)

	1985	1986	1987	1988	1989
FINISHED PRODUCTS					
Rolled flat plate	2,772	2,265	2,362	2,531	2,580
Rolled non-flat p.	2,952	3,116	3,310	3,335	3,004
Seamless pipe	292	208	282	341	355
TOTAL FINISHED	**6,016**	**5,589**	**5,954**	**6,207**	**5,939**
DERIVATIVE PRODUCTS					
Seamed pipe	470	339	401	374	367
Wire	642	645	741	716	756
Galvanized sheet	242	279	302	279	254
Tin plate	145	195	174	173	144
TOTAL DERIVATIVE	**1,499**	**1 458**	**1,618**	**1,542**	**1,521**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)

The principal end users of steel mill products are the construction and capital goods industries, which may be characterized as being highly dependent upon the economic health of Mexico. Total apparent consumption of steel and its products therefore fell in 1982 and 1983 by close to 30% each year, recovered slightly in 1984 and 1985 and fell again in 1986 by 20%. Together with the country's economic recovery, steel consumption increased close to 20% between 1987 and 1989. This has been brought about by an 11% growth in the metal products and machinery industry (appliances, office equipment and furniture, measuring and control instruments, tools and equipment), a 34% increase of the automotive industry and a 2.5% recovery of the construction industry in 1989. Preliminary figures for 1990 seem to indicate a further growth in the industry.

Although annual steel production has maintained a fairly constant level, fluctuating between 7 million and 7.9 million tons between 1980 and 1989, consumption has shown a rapid decrease, from 12.5 million tons in 1981 to 6.5 million in 1986. With Mexico's economic growth, consumption picked up again to 7.7 million tons, slightly below the production of 7.9 million tons. Having had a deficit between domestic demand and supply during the 1980-1985 period, Mexico has since then had a surplus. Due to this trend, Mexico has been exporting increasing amounts of steel and steel products, while at the same time increasing its imports.

Mexico's total steel exports were of 1.5 million tons in 1989, equivalent to $849 million, composed by $129 milllion of raw materials and semi-finished products and $720 million of finished products. The greatest increases in Mexican exports can be seen in

finished products. While in 1980 only 1.2% of total finished products were exported, in 1989 this proportion increased to 18% while exports of other products grew from 2.3% of total production to 24%. Mexico's exports have since 1984 been limited by a quota system established with the U.S. through the VRA agreements. This has forced Mexico to seek less accessible markets in terms of distance, volume, price and trade conditions.

TABLE 6
EXPORTS OF STEEL AND STEEL PRODUCTS
(000 tons)

	1985	1986	1987	1988	1989
Ferroalloys	61	77	83	125	80
Other	7	120	181	82	300
TOTAL RAW MATERIALS & SEMI-FINISHED PROD.	**68**	**197**	**264**	**207**	**380**
Flat products	107	446	339	386	262
Non-flat products	153	459	452	449	354
Seamed pipe	86	128	228	166	80
Seamless pipe	76	43	129	224	245
Other	30	51	144	162	200
TOTAL FINISHED	**452**	**1,127**	**1,292**	**1,387**	**1,141**
GRAND TOTAL	**520**	**1,324**	**1,556**	**1,594**	**1,521**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)
Note: 1989 are preliminary figures

Total imports of steel products amounted to 779,000 tons composed 57% by flat products, 18% of non-flat products and 25% of pipes and other items. This volume is equivalent to $796 million, reflecting a 32% increase as compared to 1988 and 120% as compared to 1987. Flat product imports have shown the largest increases, despite efforts of the domestic industry to satisfy demand.

TABLE 7
IMPORTS OF STEEL AND STEEL PRODUCTS
(000 tons)

	1985	1986	1987	1988	1989
Pig iron	20	10	9	25	38
Ferroalloys	5	3	4	6	10
Other	162	102	6	7	5
TOTAL RAW MATERIALS & SEMI-FINISHED PROD.	**187**	**115**	**19**	**38**	**53**

	1985	1986	1987	1988	1989
Flat products	276	254	197	321	445
Non-flat products	181	108	100	124	140
Seamed pipe	36	16	6	20	32
Seamless pipe	27	37	18	49	29
Other	43	36	39	60	80
TOTAL FINISHED	**563**	**451**	**360**	**574**	**726**
GRAND TOTAL	**750**	**566**	**379**	**612**	**779**

Source: Cámara Nacional del Hierro y el Acero (CANACERO)
Note: 1989 are preliminary figures

Mexico's investments in the iron and steel industry, according to the Latin American Iron and Steel Institute (ILFA) by production units can be seen in the following Table.

TABLE 8
INVESTMENTS IN THE IRON AND STEEL INDUSTRY
($000 dollars)

	1984	1985	1986	1987	1988
Treatment of raw materials	34,942	33,492	7,864	6,521	11,551
Reduction	50,246	16,342	3,916	3,159	2,296
Steel milling & tapping	220,572	191,993	87,627	12,318	15,152
Rolling	52,246	64,506	9,594	36,528	29,225
Other	167,613	184,697	6,647	112,847	266,164
TOTAL	**525,619**	**491,030**	**118,648**	**171,373**	**324,388**

Source: Instituto Latinoamericano del Fierro y el Acero - Anuario Estadístico de la Siderurgia y Minería del Hierro en América Latina 1989.

The funding of these investments has significantly changed in the last few years. While in 1984, 30% of investment funds were from internal sources, this share increased to 76% in 1988. Foreign funding reduced its participation from 60% in 1984 to 8% in 1988. This is mostly due to the perceived increased risk of loans to Mexico by major foreign banks since the 1982 economic and foreign debt crisis, which has, since then, led to major debt restructuring programs and slight increases in foreign funding to Mexico. The remainder is funded by domestic external financing. At present, only 5% of total investment is funded in foreign currencies, as compared to 43% in 1984.

No major investments are to be undertaken in the near future. Government funds budgeted in 1990 for the steel industry amount to $445 million, reflecting an 11% increase for SICARTSA and 82% for AHMSA. These are to be used in the modernization of AHMSA ($180 million), small advances in SICARTSA II and maintenance and repair projects at SICARTSA I, but no expansions or new projects are to be undertaken until the sale of the steel giant is closed. After that time, major projects are expected to be undertaken in order to modernize and renew existing production processes and lines. For the time being, at AHMSA two of the blast furnaces are to be repaired; the pelletizing plant will be consolidated to reach its projected production of three million tons instead of two million; the syntherizing plants will be given maintenance, as well as the basic oxygen furnaces; and the rolling mills are being modernized. At the SICARTSA plant, previously existing projects are being finished and repair jobs are undertaken in order to meet targets set and to maintain installed capacity. No further projects are defined for the SICARTSA II phase, although some equipment has been purchased to produce steel plate but has not yet been installed.

5. MARKET ACCESS

Sales in Mexico are usually made through local agents and distributors, normally operating on a commission basis. Decisions should be taken on whether to use an agent, joint venturing or licensing with a Mexican company. Mexico's market is highly competitive and companies which maintain an active presence in the market and establish a good track record by virtue of product performance, competitive price and service will do well.

All suppliers of equipment or services, whether local or foreign, to a Mexican Government entity must be registered with the Secretariat of Programming and Budget (SPP) and with the Purchasing Department of of the agency itself. All purchases over a specified minimum are subject to bidding.

As a result of Mexico's accession to GATT, the Mexican Government has gradually opened the economy to international suppliers. Import duties have been lowered from a maximum 100% in 1983, to 20% since December, 1988. The official import price system has been totally eliminated and import permits are required on only 325 of the total 11,950 items in the Mexican Tariff Act, none of which correspond to this industry. Mexico adopted the Harmonized System of Tariff Nomenclature on July 1, 1988.

The import conditions for iron and steel machinery and equipment have improved significantly as a result of this commercial liberalization. Maximum duty rates have been reduced to 20% and prior import permits are no longer required on items in this category. Imports are therefore subject to a 0% to 20% ad valorem duty assessed on the F.O.B. invoice value. In addition, a 0.8% customs processing fee is assessed on the invoice value. A 15%

value added tax is then assessed on the cumulative value of invoice plus the above taxes.

There are no official metric requirements applicable to imports into Mexico, However, since the metric system of units is by law the official standard of weights and measures in Mexico, importers will usually require metric labeling for packaged goods, although the English system is also used. Dual labeling is acceptable. Imported products should be labeled in Spanish containing the following information: name of the product, trade name and address of the manufacturer, net contents, serial number of equipment, date of manufacture, electrical specifications, precautionary information on dangerous products, instructions for use, handling and/or product conservation and mandatory standards. Mexico adheres to the International System of Units (SI). Electrical standards are the same as in Canada. Electric power is 60 cycles with normal voltage being 110, 220 and 400. Three phase and single phase 230 volt current is also available.

Prepared by:
Caroline Verut
for the Canadian Embassy
Mexico City
September 1990

WHEN SELLING TO THE MEXICAN GOVERNMENT AND ITS AGENCIES, IT IS REQUIRED TO HAVE REGISTRY NUMBER AS FOREIGN SUPPLIER. FOLLOWING IS RELATED INFORMATION.

REGISTRATION WITH SECRETARIA DE PROGRMACION Y PRESUPUESTO (SPP)

Following is a summary of Registration Procedures for Canadian Companies wishing to sell to the Mexican Government and its decentralized agencies.

Note: Registration procedures now cannot be done by the foreign (Canadian) supplier, and must be done by the company's official local agent/representative in Mexico.

To obtain registry, the following documents should be submitted to the Registro de Proveedores Office of the Secretaría de Progrmación y Presupuesto (SPP) (Ministry of Planning and Budgeting) located at the following address:

Registro de Contratistas y
Proveedores de la Administración
Pública Federal S.P.P.
Av. San Antonio Abad No. 124 - Piso 1
Col. Tránsito
06380 México, D.F.

a) Applications for registration of foreign supplier forms SPP in original and 3 copies, all signed separately.

b) A copy of the company's balance sheet and profit and loss stateent with data not older than two months with respect to the date of application entry into the Foreign suppliers registry, also translated into Spanish and legalized by the Mexican Consulate.

c) Copy of power of company's legal representatives in Canada notarized, and certified by Mexican Consul (documents mentioning full name of person or persons, legally authorized to sign documents on behalf of company showing his (their) signature.

d) Copy of agency/representative contract in Mexico notarized and then certified by Mexican Consul.

e) Copy of a document that proves and guarantees legal existence of company in Canada.
A certificate of incorporation from a Canadian -

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Registro de Contratistas y
Proveedores de la Administracion
Publica Federal S.P.P.
Av. San Antonio Abad No. 124 - Piso 1
Col. Tranaito
06780 Mexico, D.F.

a) Applications for registration of foreign supplier forms SPP in original and 3 copies, all signed separately.

b) A copy of the company's balance sheet and profit and loss statement with data not older than two months with respect to the date of application entry into the foreign suppliers registry, also translated into Spanish and legalized by the Mexican Consulate.

c) Copy of power of company's legal representatives in Canada notarized, and certified by Mexican Consul (documents mentioning full name of person or persons, legally authorized to sign documents on behalf of company showing his (their) signature.

d) Copy of agency/representative contract in Mexico notarized and then certified by Mexican Consul.

e) Copy of a document that proves and guarantees legal existence of company in Canada.
A certificate of incorporation from a Canadian -

Chamber of Commerce or Industry Chamber. This letter must be presented in its original form and must state that interested company has been legally incorporated in accordance to the laws of the country and must include the date of incorporation. The letter cannot be more than six months old from the date it was issued. In addition it must be translated into Spanish and legalized by the Mexican Consulate.

f) Limited power to local agent to act on behalf of foreign firm on disputes and collection matters.

g) A photocopy of sample past invoices for each product to be supplied duly translated and legalized by the Mexican Consulate with the date and the names of the buyer and the seller underlined and highlighted.

2. Once application forms and supporting documents are approved, registration number is issued in two to four weeks time. To claim registration number, foreign firm's representative will have to present original and copy of HD-1 form "Declaración General de Pago de Derechos" duly paid.

3. To obtain HD-1 forms.
As first step, payment of $366,000 Mexican Pesos (as of April 1990 and rate subject to changes) should be made at any office of the Secretaría de Hacienda y Crédito Público (SHCP) in cash, or with Mex. Peso bank draft in favor of the "TESORERIA DE LA FEDRACION" payable through a Mexican bank located in Mexico City and should be accompanied by four (4) payment forms DH1. Each form should be signed separately. Forms can be obtained at any SHCP's offices.

IMPORTANT

TO AVOID REFUSAL OF APPLICATIONS

I Copies of documents b, c, d, e, f, g, must be translated into Spanish by certified local translator if done in Mexico. However if documents b, c, d, e, f, g and respective translations are done into Spanish in Canada, these do not have to be done by certified translator, as above, but documents and translations must be duly notarized, and then certified by nearest Mexican Consul in your area.

II Original and copies of application forms must be signed separately by company's legal representative.

III Corporate name should appear exactly the same in all documents: (i.e.: spelling, company names which have changed over the years).

Legal representative's signature should be signed separately on following documents:

- DH-1 Payment forms
- Registry application forms (both pages)
- Power of legal representative of company in Canada.
- Copy of agency/representative contract in Mexico.
- Limited power to local agent.

While every effort has been made to provide the above information accurately, the Canadian Embassy cannot assume responsibility for errors, omissions or subsequent changes in procedure which may occur.

Information
updated April/90
Canadian Embassy
Mexico City

CAMARA NACIONAL DE LA INDUSTRIA DEL HIERRO Y DEL ACERO
-IRON AND STEEL INDUSTRY-
Amores No. 338
[illegible] Valle
[illegible]199 México, D.F.
MEXICO
☎ (5) 543-4443 Fax (5) 687-0517
Telex 1764195

CAMARA NACIONAL DE LA INDUSTRIA DE LA TRANSFORMACION (CANACINTRA)
-TRANSFORMATION INDUSTRY-
Av. San Antonio No. 256
Nápoles
03849 México, D.F.
MEXICO
☎ (5) 563-3400 Fax (5) 598-9467
Telex 1777466

CAMARA MINERA DE MEXICO
-MINING-
Sierra Vertientes No. 369
Lomas de Chapultepec
11000 México, D.F.
MEXICO
☎ (5) 540-6061 Fax (5) 540-6788

ASOC. MEXICANA DEL COBRE, A.C.
-COOPER PRODUCERS-
Av. Sonora No. 166, 1er. Piso
Hipódromo Condesa
06100 México, D.F.
MEXICO
☎ (5) 207-2254 Fax (5) 286-7723
Telex 1771673

SIDERURGICA LAZARO CARDENAS LAS TRUCHAS, S.A.
Monterrey No. 150
06700 México, D.F.
MEXICO
☎ (5) 584-4647 FAX: (5) 574-1207
TX: 1771113 STLCME
CONTACT: Gabriel Magallón Barajas/ Santiago Neaves Ríos
ESTABLISHED: 1971
EXPORTING SINCE: 1988
EMPLOYEES:*****
[illegible]NUFACTURER
[illegible]PORTS: B.C. Wire Rod (To Draw); Coal Tar; Rods 1/2" and Over.
EXPORTING TO: U.S.A., Italy, China, Hong Kong.

TUBOS RGC, S.A.
Félix U. Gómez No. 135 Sur
64000 Monterrey, N.L.
MEXICO
☎ (83) 42-6217
TX: 382950 ARGCME
CONTACT: Adrián González
EXPORTING SINCE: 1988
MANUFACTURER
EXPORTS: Fine Carbon Oil; Iron or Rolled Steel Strap.
EXPORTING TO: U.S.A.

FUNDICION MAC, S.A. DE C.V.
Senda No. 427
Los Lermas
67190 Guadalupe, N.L.
MEXICO
☎ (83) 37-1370 FAX: (83) 37-7808
CONTACT: Raúl Maciel Villa/ Raúl Eduardo Maciel C.
ESTABLISHED: 1981
EXPORTING SINCE: 1985
EMPLOYEES:**
BANK REFERENCE: BANCOMER SNC
MANUFACTURER
EXPORTS: Water Pumps; Pulley Disks (Tractor); Mill Spheres; Compressor Parts; Engine Parts; Brake Rotors; Brake Drums.
EXPORTING TO: U.S.A.
IMPORTS: "Cupola" Scrap; "Monoblock" Scrap.

FUNDICION NARDO, S.A.
Poniente 146 No. 519
Industrial Vallejo
07710 México, D.F.
MEXICO
☎ (5) 587-5100 FAX: (5) 567-7351
CONTACT: Juan J. Molina Segundo/ Jesús Molina Segundo
ESTABLISHED: 1963
EXPORTING SINCE: 1979
EMPLOYEES:*
BANK REFERENCE: BANAMEX SNC
PRODUCER
EXPORTS: Bathroom Drainage Accessories; Drinking Water Connections.
EXPORTING TO: U.S.A.

FUNDICION Y MAQUINADO DE QUERETARO, S.A. DE C.V.
Acceso II No. 18
Industrial Benito Juárez
76130 Querétaro, Qro.
MEXICO
☎ (463) 7-0174 FAX: (463) 7-0857
TX: 121681 COKEHE
CONTACT: Eduardo Mainero Caballero/ Rodolfo Gruenberger Soto
ESTABLISHED: 1971
EXPORTING SINCE: 1983
EMPLOYEES:**
BANK REFERENCE: BANCOMER SNC
MANUFACTURER
EXPORTS: Brake Drums.
EXPORTING TO: Canada, U.S.A.
IMPORTS: Coke.

SIDERURGICA NACIONAL, S.A.
Miguel Angel de Quevedo No. 980
Coyoacán
04040 México, D.F.
MEXICO
☎ (5) 689-1633 FAX: (596) 32700
TX: 1772883
CONTACT: Alfonso Monteagudo Landeras/ Jesús Fernández Sánchez
ESTABLISHED: 1961
EXPORTING SINCE: 1988
EMPLOYEES:****
MANUFACTURER
EXPORTS: Steel Rings; Soles and Steel Squares.
EXPORTING TO: U.S.A., Colombia, Venezuela.

SIDERURGICA TULTITLAN, S.A. DE C.V.
Av. Nuevo León No. 250-7
Condesa
06100 México, D.F.
MEXICO
☎ (5) 272-0287 FAX: (5) 272-6297
CONTACT: Israel Feldman P./ Miguel Krumholz B.
ESTABLISHED: 1986
EXPORTING SINCE: 1987
EMPLOYEES:**
BANK REFERENCE: BANCOMER SNC
MANUFACTURER
EXPORTS: Steel Lever.
EXPORTING TO: El Salvador, Guatemala.
IMPORTS: Steel Scrap.

FUNDICIONES ALTZAIRU, S.A. DE C.V.
Hermenegildo Galeana No. 3
San Juan Ixhuatepec
54180 Tlalnepantla, Edo. de Mex.
MEXICO
☎ (5) 781-9189 FAX: (5) 577-3471
CONTACT: Iñaki Ertze Encinas/ Sergio Román Morales
ESTABLISHED: 1957
EXPORTING SINCE: 1987
EMPLOYEES:**
BANK REFERENCE: SOMEX SNC
MANUFACTURER
EXPORTS: Stainless Steel Cast Piece; Carbon Steel Cast Pieces.
EXPORTING TO: Canada, Costa Rica, Cuba, U.S.A.

TUBERIA NACIONAL, S.A.
Diego Díaz de Berlanga No. 1002
Valle del Nogalar
66480 San Nicolás de los Garza, N.L.
MEXICO
☎ (83) 51-6247 FAX: (83) 51-8050
CONTACT: Guillermo Morcos/ Juventino Martínez
ESTABLISHED: 1951
EXPORTING SINCE: 1976
EMPLOYEES:***
BANK REFERENCE: MERCANTIL DE MEXICO SNC
MANUFACTURER
EXPORTS: Seamless Steel Pipes; Gas, Water, Oil Pipes; Carbon Steel Pipe; Conduit Pipes; Carbon Steel Weld Pipe.
EXPORTING TO: Canada, U.S.A.

FUNDIDORA VOLCAN, S.A. DE C.V.
Oriente 257 No. 86
Agrícola Oriental
08500 México, D.F.
MEXICO
☎ (5) 558-1021 FAX: (5) 558-0475
TX: 1762158 FURVME
CONTACT: Manuel Ruiz Rodríguez
ESTABLISHED: 1972
EXPORTING SINCE: 1987
EMPLOYEES:**
BANK REFERENCE: BANCOMER SNC
MANUFACTURER
EXPORTS: Iron Connection for Pipes; Non-Schemed Iron Valve Parts.
EXPORTING TO: U.S.A.

FUNDIVAL, S.A. DE C.V.
Jaime Balmes No. 11 Edif. A-Plaza Polanco
Chapultepec Morales
11510 México, D.F.
MEXICO
☎ (5) 557-2400 FAX: (5) 557-5960
TX: 1773392
CONTACT: Héctor Sánchez Madrid/ Armando Vega Iñiguez
ESTABLISHED: 1979
EXPORTING SINCE: 1982
EMPLOYEES:**
BANK REFERENCE: BANAMEX SNC
MANUFACTURER
EXPORTS: Iron and Bronze Valves.
EXPORTING TO: Canada, Costa Rica, Cuba, El Salvador, U.S.A., Guatemala, Colombia, Peru, Venezuela, Saudi Arabia.
IMPORTS: Bronze; Cast Iron; Coke; Nickel; Spare Parts.
OFFICES ABROAD:
10190 Harwin Drive
Houston, Texas
U.S.A. 77036
☎ (713) 777-7788 FAX: (713) 981-1246
TX: 166193

TUBERIA LAGUNA, S.A. DE C.V.
Valle del Guadiana No. 355
Parque Industrial
35070 Gómez Palacio, Dgo.
MEXICO
☎ (17) 16-7928 FAX: (17) 12-2466
TX: 32562
CONTACT: Jaime Gutiérrez Pesquera/ José Ignacio López Garza
ESTABLISHED: 1971
EXPORTING SINCE: 1983
EMPLOYEES:**
BANK REFERENCE: BANCOMER SNC
MANUFACTURER
EXPORTS: Steel Pipes.
EXPORTING TO: U.S.A.
IMPORTS: Spare Parts; Trimming Rolls for Locks.

TUBOS DE ACERO DE MEXICO, S.A.
Campos Elíseos No. 400 - 1
Chapultepec Polanco
11660 México, D.F.
MEXICO
☎ (5) 202-0003 FAX: (5) 202-2473
TX: 1771819 TAMESME
CONTACT: Luis Bossi/ Gunter Zwingman
ESTABLISHED: 1951
EXPORTING SINCE: 1983
EMPLOYEES:*****
BANK REFERENCE: SERFIN SNC
MANUFACTURER
EXPORTS: Seamless Steel Pipes.
EXPORTING TO: Canada, Costa Rica, El Salvador, U.S.A., Brazil, Chile, Colombia, Ecuador, Peru, Venezuela, Saudi Arabia, India, China, U.S.S.R., Malaysia, Indonesia, Iran.
IMPORTS: Scrap.

TUBOS DE ESTAÑO, S.A. DE C.V.
Oriente 174 No. 443
Moctezuma 2a. Sección
15500 México, D.F.
MEXICO
☎ (5) 571-3822 FAX: (5) 785-2671
CONTACT: Humberto Mestre Rivera/ Horacio Medina Martínez
ESTABLISHED: 1942
EXPORTING SINCE: 1969
EMPLOYEES:***
BANK REFERENCE: BANAMEX SNC
MANUFACTURER
EXPORTS: Collapsible Aluminum Containers; Aluminum Rigid Containers.
EXPORTING TO: Costa Rica, El Salvador, U.S.A., Guatemala, Honduras, Nicaragua, Panama, Dominican Rep., Colombia, Ecuador, Peru, Venezuela.
IMPORTS: Production Equipment; Spare Parts; Zinc Behanate.

TUBACERO, S.A.
Av. Guerrero No. 3729 Nte.
Del Norte
64500 Monterrey, N.L.
MEXICO
☎ (83) 51-8100 FAX: (83) 51-3550
TX: 383829 TUBMME
CONTACT: Felipe Avila Marcue/ Javier Villarreal
EXPORTING SINCE: 1988
MANUFACTURER
EXPORTS: Steel Pipes.
EXPORTING TO: U.S.A., Kuwait, Latin America.

FUNDICIONES RUIZ, S.A. DE C.V.
Oriente 257 No. 86
Agrícola Oriental
08500 México, D.F.
MEXICO
☎ (5) 558-1011 FAX: (5) 558-0475
TX: 1762158 FURUME
CONTACT: Manuel Ruiz Rodríguez
ESTABLISHED: 1956
EXPORTING SINCE: 1987
EMPLOYEES:**
BANK REFERENCE: BANCOMER SNC
MANUFACTURER
EXPORTS: Iron Connection for Pipes; Non-Schemed Iron Valve Parts.
EXPORTING TO: U.S.A.

FUNDIDORA DE ACEROS TEPEYAC, S.A. DE C.V.
Vía Morelos No. 349
Tulpetlac
55400 Ecatepec de Morelos, Edo. de Mex.
MEXICO
☎ (5) 569-7125 FAX: (5) 755-3186
TX: 171948
CONTACT: Oscar Michellod Anchondo/ Eduardo Martín Iturbide
ESTABLISHED: 1946
EXPORTING SINCE: 1968
EMPLOYEES:***
BANK REFERENCE: COMERMEX SNC
MANUFACTURER
EXPORTS: Connector; Cones; Breechings; Toads (Tools); Yoke.
EXPORTING TO: Canada, Costa Rica, Cuba, U.S.A., Brazil, Colombia, Venezuela, Australia, Korea.
IMPORTS: Calcium Silicon; Graphite Caps; Incomag (Ni Mg); Inserts and Tools; Silicon Zirconium; Steel Pipe.

CERO Y FLECHAS DEL CENTRO, S.A. DE C.V. Tel. 390-2233
Gilberto Gómez 259
Centro Industrial
54030 Tlalnepantla, Méx.
[illegible] Paredes Villarreal, General Director; Luis Antonio Paredes, Administrative Manager.
Distributors of steel.
Established 1979 • Personnel 40

ACERO ROLADO MEXICANO, S.A. DE C.V. (ACROMEX) Tel. 511-6745, 511-7581
Durango 263, 8o. Piso
Col. Roma
Del. Cuauhtémoc
06700 México, D.F.
Felipe Madero González, General Director; Arq. Héctor M. Medrano Rodríguez, Commercial Director; Ing. Carlos Anaya Wallin, Suppliers Director; Luz María Rodríguez Martínez, Administrative Manager.
Manufacturers of rolled steel.

ACEROS MONTERREY, S.A. Tel. 53-5353
Peña Guerra 150
Col. Peña Guerra
66490 San Nicolás de los Garza, N.L.
Apdo. Postal 3015
64000 Monterrey, N.L.
Lic. P. Ramiro H. Garza Villarreal, General Director; Lic. Raúl H. García Guerrero, Administrative and Export Manager.
General steel products trading.

ACEROS R.G.C., S.A. Tel. 53-4444
Av. López Mateos 502 Norte
Col. Lagrange
66490 San Nicolás de los Garza, N.L.
Apdo. Postal 79-A
66400 San Nicolás de los Garza, N.L.
Ing. Adrián G. González Lozano, Operations Director.
Steel and other metal products.
Established 1979 • Personnel 133 • Telex 382950

ACEROS, FABRICACIONES Y MAQUILAS, S.A. DE C.V. Tel. 4-4323
Carr. Agricultura Km. 3
25070 Saltillo, Coah.
Apdo. Postal 304
25000 Saltillo, Coah.
Ing. Ulises González V., Manager; Ramón Rodríguez Narro, Partner; Herminio Rodríguez N., Partner.
Metal sheets and plaque, cutting and bending.
Established 1981 • Personnel 48 • Telex 381187

ACEROS LOZANO, S.A. Tel. 37-0401, 37-0402
Madero Oriente 3901
Col. Fierro
64590 Monterrey, N.L.
Lic. Maritza Lozano Chapa, General Manager.
In-bond manufacture and distribution of steel.
Established 1981 • Personnel 35

ACERTA MEXICANA, S.A. DE C.V. Tel. 6-0021
Francisco I. Madero 1010
Parque Industrial El Carmen
66550 Villa del Carmen, N.L.
Lic. Jorge Humberto Padilla, General Director.
Manufacturers of steel.
Established 1974 • Personnel 35

CORPORATIVO GRUPO IMSA Tel. 75-2281
Villagrana 1313 Norte Fax 75-4183
Col. Industrial
64440 Monterrey, N.L.
Apdo. Postal 518
64000 Monterrey, N.L.
Ing. Abelardo Avellán Cordero, Planning and Development Manager.
Galvanized sheeting, tubing, drainage pipes, polyurethane panels.
Telex 382311

CYLINDROS, S.A. Tel. 51-2459
Calz. Vía a Matamoros 900
Col. Garza Cantú
66480 San Nicolás de los Garza, N.L.
Apdo. Postal 1052
64000 Monterrey, N.L.
Ing. Emilio Cabrera, General Manager.
Domestic liquid gas storage tanks.
Established 1949 • Personnel 150

CUPRUM, S.A. DE C.V. Tel. 50-4110
Av. Diego Díaz de Berlanga 134 50-4299
Col. El Nogalar Fax 53-1675
66480 San Nicolás de los Garza, N.L.
Apdo. Postal 1254
64000 Monterrey, N.L.
Lic. Felipe Muzquiz Ballesteros, General Director.
Aluminum extrusions and assembled products: ladders and chairs.
Established 1947 • Personnel 800 • Telex 382600

GENERAL DE LAMINAS, S.A. Tel. 55-3131
Río Santa Catarina 1030 Norte
Col. Fierro
64590 Monterrey, N.L.
Ubaldo Ortiz de los Santos, Manager; C.P. Federico Ortiz de los Santos, Sales Manager; Sergio Ortiz de los Santos, Purchasing Manager.
In-bond manufacture and distribution of steel.
Established 1985 • Personnel 18

FUNDICIONES PECOR, S.A. DE C.V. Tel. 50-0772
Callejón Santo Domingo 1117 50-0773
Apdo. Postal 53, Suc. A
Col. Lagrange
66400 San Nicolás de los Garza, N.L.
Ing. Ramón Pérez Córdova, General Director; Ing. Raúl González Balboa, Technical Director; C.P. Mauro Salazar Cisneros, General Manager; Ana María Firmani, Commercial Manager.
Aluminum foundry; die cast, sand and permanent mold castings.
Established 1980 • Personnel 250 • Telex 382499

FUNDICION DE FIERRO Y ACERO EUREKA, S.A. Tel. 51-0644
Ciprés y Violeta 3102
Col. Moderna
64350 Monterrey, N.L.
Apdo. Postal 407
64000 Monterrey, N.L.
Federico Gutiérrez, General Manager.
Foundry (iron, steel, bronze, aluminum).
Established 1951 • Personnel 9

INDUSTRIAS METALICAS ZEUS, S.A. Tel. 31-2238
Benjamín Romero 97
Col. Arcos Sur
44100 Guadalajara, Jal.
Ing. Juan de Dios Vargas Méndez, General Manager.
Manufacturers of steel.

HYLSA, S.A. DE C.V. **Tel. 51-8020**
Guerrero y Munich
Col. Cuauhtémoc
66400 San Nicolás de los Garza, N.L.
Apdo. Postal 996
64000 Monterrey, N.L.
Lic. Roberto F. Cavazos, Assistant Vice-President, External Affairs.
Steel mill.
Established 1943 • Personnel 7,347 • Telex 382866

HECKETT MEXICANA, S.A. DE C.V. **Tel. 51-2744**
Hidalgo 1270 Poniente, Local 4
Col. Mirador
64070 Monterrey, N.L.
Apdo. Postal 98, Suc. A
66400 San Nicolás de los Garza, N.L.
Ing. David Herrera Urbina, General Director.
Waste metal processing.
Established 1967 • Personnel 32 • Telex 382204

INDUSTRIAL ALBA/ALEJANDRO BALDERAS **Tel. 52-1487**
Salinas Victoria 706 **76-4195**
Col. Chapultepec
66450 San Nicolás de los Garza, N.L.
J. Alejandro Balderas Sánchez, Director.
Manufacturers and distributors of sheet metal, steel, castings.
Personnel 1,976

INDUSTRIALIZADORA DE ALAMBRE, S.A. DE C.V. **Tel. 23-6712**
Gral. Juan Aguirre 308
Col. Constitución
45180 Zapopan, Jal.
Felipe Flores Horta, General Director.
Transformation, distributors, import, and export of steel, and steel products.

INDUSTRIA DE REPUESTOS, S.A. **Tel. 47-3112**
Av. Lázaro Cárdenas 4135-201 **47-3113**
Col. Camino Real
45040 Guadalajara, Jal.
Apdo. Postal 1-1193
44890 Guadalajara, Jal.
Gerardo Meiners Huebner, General Director.
Manufacturers of chains, roller bearings and sprockets.
Established 1962 • Personnel 400 • Telex 682651

INDUSTRIAS DUPLEX, S.A. DE C.V. **Tel. 12-5594**
Calle 20 No. 3177
Zona Industrial
44940 Guadalajara, Jal.
Gustavo Villaseñor V., General Manager.
Manufacturers of metal products.
Established 1974 • Personnel 49

MEXTUBOS, S.A. DE C.V. **Tel. 524-4468**
Aniceto Ortega 1230 **524-4479**
Apdo. Postal 73-350 **Fax 534-6769**
Col. Del Valle
Del. B. Juárez
03100 México, D.F.
Emilio Suárez Méndez, General Director; C.P.S. Patricia González Zaragoza, Administrative Manager; Lic. José L. Jiménez Popoca, Purchasing Supervisor; Lic. José Flores Meza, Human Resources Manager.
Manufacture, commercialization and sale of tubing products and other construction products.
Established 1954 • Personnel 434 • Telex 1775654

MAQUILADORA GUADALAJARA, S.A. DE C.V. **Tel. 43-7982**
Calle 56 No. 57
Sector Reforma
44800 Guadalajara, Jal.
Ing. Oscar E. Núñez Orozco, General Manager.
Manufacturers of antennas, conveyor belts, structural shapes, telecommunications equipment.
Established 1969 • Telex 684241

SOLERAS MEXICANAS, S.A. DE C.V. **Tel. 22-7376**
Av. Soleras 130
45010 Guadalajara, Jal.
Steel, window shades and crossbeam.
Personnel 120 • Telex 684088

MEXINOX, S.A. DE C.V. **Tel. 592-1088**
Paseo de la Reforma 116, 14o. Piso
Col. Juárez
Del. Cuauhtémoc
06600 México, D.F.
Juan Autrique, General Director; Rafael Luján, Domestic Market Director; Lorenzo Rodríguez, Purchasing Manager; Juan Casanueva, Export Director.
Manufacturers of stainless steel.
Established 1972 • Personnel 550 • Telex 1776210

NUTEC, S.A. DE C.V. **Tel. 48-8888**
Priv. San Jerónimo 225 Sur
Col. San Jerónimo
64650 Monterrey, N.L.
Apdo. Postal 5332
64000 Monterrey, N.L.
Genaro Cueva, General Director; Ramiro Villarreal, Administrative Director; Rogelio Ruiz L., Commercial Director.
Industrial furnaces and equipment.
Established 1975 • Personnel 26 • Telex 382355

NACIONAL DE ACERO, S.A. DE C.V. **Tel. 53-5097**
Antigua Carr. a Roma Km. 5 **53-9515**
66470 San Nicolás de los Garza, N.L. **Fax 50-3933**
Apdo. Postal 2989
64000 Monterrey, N.L.
C.P. Federico Irizar F., General Director; C.P. Antonio Villarreal Martínez, Administrative Manager; Ing. Alfredo Estrada Martínez, Assistant Director; Ing. Jorge E. Salinas Morales, Plant Manager.
Channels for construction and structural tubing.
Established 1970 • Personnel 175 • Telex 383322

NIRO MANUFACTURAS, S.A. DE C.V. **Tel. 79-9300**
Carr. a Hulnalá 220
Apdo. Postal 045, Suc. C
66600 Apodaca, N.L.
Ing. Víctor Daniel Cuevas Marín, General Manager; Carmen Julia M., Accountant; Román Galván, Purchasing Manager.
Custom manufacturers of stainless steel equipment.
Established 1979 • Personnel 110 • Telex 382083

CONTROL DE FLUIDOS, S.A. DE C.V. **Tel. 576-8555**
San Andrés Atoto 9-E
53500 Naucalpan, Méx.
Víctor Terrazas Muñoz, General Director; Alberto Moreno Bahena, Assistant General Manager; Félix Terrazas Muñoz, Sales Manager.
Couplings, filters, steel and stainless steel tubing, control and safety valves.
Established 1976 • Personnel 17

PRODUCTORA INDUSTRIAL, S.A. DE C.V. **Tel. 576-0933**
Ingenieros Militares 4 **Fax 358-6362**
Col. San Francisco Cuautlalpan
53560 Naucalpan, Méx.
Javier Lee Kim, General Manager; Carlos Deseusa Alvarez, Administrative Manager; César Brondo Fernández, Sales Manager; Angel Rodríguez, Purchasing Department Supervisor; Juan Cabello Ramírez, Production Manager
Acetylene gas, acetylene cylinders, hand hacksaw blades.
Established 1951 • Personnel 80 • Telex 1777592

PRODUCTORA MEXICANA DE TUBERIA, S.A. DE C.V. **Tel. 523-0490**
Av. Insurgentes Sur 664, 11o. Piso
Col. Del Valle
Del. B. Juárez
03100 México, D.F.
Ing. Emilio Zorrilla Vázquez, General Director; Lic. Héctor Martínez, Commercial Promotion Manager; Ing. Alejandro Sibaja, Marketing Director.
Manufacturers of steel pipe, from 16" a 40" of diameter.
Established 1980 • Personnel 450 • Telex 1776510

SANDVIK DE MEXICO, S.A. DE C.V. **Tel. 397-2144**
Av. Gustavo Baz 352
Col. La Loma
54060 México, D.F.
Apdo. Postal 512
06000 México, D.F.
Bjorn von Malmborg, Managing Director; Marcelo G. de Oliveira, Commercial Director; Bert Emnevik, Commercial Director, Steel.
Manufacturers of steel, special steel, stainless steel, cutting tools, conveyor belts, drilling equipment, tungsten carbide tools.
Established 1961 • Personnel 360 • Telex 172271

STAHLTEK, S.A. DE C.V. **Tel. 70-8668**
San Bernales 221 **73-7151**
Col. Valle Morelos
64180 Monterrey, N.L.
Ing. Jorge Caballero Ayala, General Director; Ing. Eduardo Martínez Villarreal, General Manager; C.P. José Gerardo Caballero Ayala, Administrative Manager; Ing. Andrés Cavazos Fernandez, Sales Manager.
Manufacturers of metal structures and industrial fans.
Established 1983 • Personnel 20

TUBOS DE ESTAÑO, S.A. DE C.V. **Tel. 571-3822**
Oriente 174 No. 443
Col. Moctezuma
Del. V. Carranza
15500 México, D.F.
Humberto Mestre Martínez, General Manager; Horacio Medina Martínez, Sales Manager; Ing. Humberto Mestre Rivera, Operations Manager.
Manufacturers of aluminum containers.
Established 1942 • Personnel 600 • Telex 1771300

TROQUELADOS INDUSTRIALES DE PRECISION, S.A. **Tel. 397-3566**
Fax 822-9411
Blvd. Adolfo López Mateos 21
Col. México Nuevo
Atizapán de Zaragoza
54500 López Mateos, Méx.
Apdo. Postal 16056
02000 México, D.F.
Georg Lauprecht, General Manager; Guadalupe Arizpe, Sales Manager; Arturo Alcaraz, Plant Manager.
Metal stamping.
Established 1979 • Personnel 70

TUBOS DE ACERO DE MEXICO, S.A. **Tel. 202-0003**
Campos Elíseos 400 **Fax 202-2050**
Col. Chapultepec Polanco
Del. M. Hidalgo
11000 México, D.F.
Apdo. Postal 32-139
06030 México, D.F.
Ing. Luis Bossi, General Director; Lic. Guillermo Vogel, Deputy General Director; Lic. José Brogeras Oliva, Personnel and Public Relations Director; Emilio Paulón, Comptroller Director; Ing. Gunter Zwingman, Exports Director; Lic. Julio Freyssinier, Finance Deputy Director.
Manufacturers of seamless steel pipes.
Established 1952 • Personnel 4,445 • Telex 1771307

Zinc–primary smelting and refining

Industrial Minera México, S.A. de C.V.

INDUSTRIAL MINERA MEXICO, S.A. DE C.V. 564-7066
Baja California 200
Col. Roma Sur
Del. Cuauhtémoc
06760 México, D.F.
Apdo. Postal 38 Bis
06000 México, D.F.
Ing. Héctor Calva Ruiz, General Director; Lic. Juan Sánchez Navarro R., Commercial Director; Ing. Federico Kurz, Legal Director.
Refined silver, lead, zinc; zinc concentrates, blister copper, fluorspar.
Established 1918 • Personnel 12,319 • Telex 1776264

Lead and zinc mining

Industrial Minera México, S.A. de C.V. SEE ABOVE
Industrias Peñoles, S.A. de C.V.

INDUSTRIAS PEÑOLES, S.A. DE C.V. 286-8133
Río de la Plata 48
Col. Cuauhtémoc
Del. Cuauhtémoc
06500 México, D.F.
Apdo. Postal 686
06000 México, D.F.
P. Sánchez Mejorada, President; J. Gaytán, Group Vice-President, Mining and Exploration; O. Porter, Group Vice-President, Finance; J. Lomelí, Group Vice-President, Metals and Chemicals; R. Schroeder, Group Vice-President, Development Engineering; A. Hernández, Vice-President, Law and Industrial Relations.
Gold, silver, lead, zinc, copper, cadmium, bismuth, sulfuric acid, antimony trioxide, sodium sulfate, magnesium oxide, refractories.
Established 1887 • Personnel 12,000 • Telex 1772487

Aluminum–primary production

Fundición de Fierro y Acero Eureka, S.A. (Monterrey)

FUNDICION DE FIERRO Y ACERO EUREKA, S.A. 51-0644
Ciprés y Violeta 3102
Col. Moderna
64350 Monterrey, N.L.
Apdo. Postal 407
64000 Monterrey, N.L.
Federico Gutiérrez, General Manager.
Foundry (iron, steel, bronze, aluminum).
Established 1951 • Personnel 9

FUNDICIONES PECOR, S.A. DE C.V. 50-0772 50-0773
Callejón Santo Domingo 1117
Apdo. Postal 53, Suc. A
Col. Lágrange
66400 San Nicolás de los Garza, N.L.
Ing. Ramón Pérez Córdova, General Director; Ing. Raúl González Balboa, Technical Director; C.P. Mauro Salazar Cisneros, General Manager; Ana María Firmani, Commercial Manager.
Aluminum foundry; die cast, sand and permanent mold castings.
Established 1980 • Personnel 250 • Telex 382499

FOUNDRY / CASTINGS

ELECTROLYTIC COPPER/COBRE ELECTROLITICO

INDUSTRIAL MINERA MEXICO, S.A. SEE FIRST CO
LA PALOMA, CIA. DE METALES, S.A. DE C.V.
METALES AGUILA, S.A.
PHIBRO DE MEXICO, S.A.
TENNANT MEXICO, S.A. DE C.V.

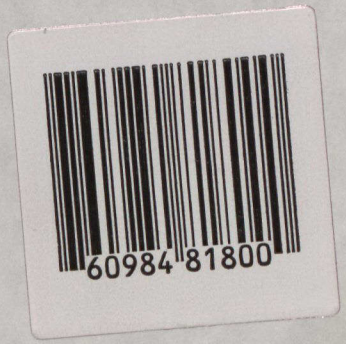
TENNANT MEXICO, S.A. DE C.V. Tel. 566-8811
Stephen V. Naegle, General Manager. Paseo de la Reforma 51, 14o. Piso, Col. Centro, Del. Cuauhtémoc, 06030 México, D.F. Telex: 17-71-009. Distribution: Minerals, copper mining, electrolytic copper, aluminum and aluminum products, chemicals, electronic components, metals, steel, etc. Established: 1966.

TENNANT COMPANY C/O DISTRIBUIDORA DE EQUIPOS ESPECIALIZADOS, S.A. DE C.V. Tel. 527-9347
Jesús Hernández, General Manager. John P. Krishon, Sales Manager-Latin America. Marina Nacional 205, Col. Tacuba, Del. M. Hidalgo, 11410 México, D.F. Industrial maintenance equipment. Personnel: 1,100. (POTENTIAL REPRESENTATIVE)

PHIBRO DE MEXICO, S.A. Tel. 531-7020
Hans Buehler Dobbek, Managing Director; Victor M. Vázquez Pando, General Manager; Jaime R. Prudencio González, Commercial Manager. Gutenberg No. 162, Col. Nueva Anzures, Del. M. Hidalgo, 11590 México, D.F. Telex: 17-71-322. Distribution: Metals, minerals; representations. Established: 1963, Personnel: 28.

METALES AGUILA, S.A. Tel. 538-6520
Ing. Hugo De Luca Monteverde, General Manager. Dr. Jiménez 268, Col. Doctores, Del. Cuauhtémoc, 06720 México, D.F. Manufacturing: Non-ferrous metal products, brass, nickel, alloys, aluminum and aluminum products, crucibles, electrolytic copper, foundry, metals. Established: 1968, Personnel: 100.

LA PALOMA, CIA. DE METALES, S.A. DE C.V. Tel. 358-5744
Ma. Elena Morales O., Purchasing Manager; Manuel Maza Zubieta, Sales Manager. San Luis Tlatilco 8, Parque Industrial, Naucalpan, Méx., 53370 México. Telex: 17-71-974. Aluminum, brass, bronze, stainless steel, nickel. Established: 1947, Personnel: 50.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