Asbestos Banned in Argentina

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In 1997, Argentina gave priority to asbestos in its National Plan for the Sound Management of Chemicals, and it was the subject of a Technical Task Force on Occupational Cancer. After five years of public hearings in which government, workers, industry advocates, environmentalists, clinicians, scientists, and consumers participated, it was agreed that asbestos exposure is a risk factor for both workers and the general population, and that Argentina should provide to its people the same protections adopted by many developed countries. Pressure from asbestos industry groups initially delayed the inclusion of chrysotile asbestos in the proposed ban, but on January 1, 2003, the mining and import of all forms of asbestos were banned in Argentina. *Key words*: asbestos; asbestos-related diseases; occupational cancer, asbestos ban.

INT J OCCUP ENVIRON HEALTH 2004;10:202–208

Although asbestos has been mined in Argentina since 1869,[1] it became important to the country's economy only during the post–World War II period, when global demand for asbestos products skyrocketed. In 1956, the National Directorate of Military Factories published in its report "Mineral Industrial Inspection of the Asbestos Mines in the Province of Mendoza" a rare mention of asbestos industry activities existing in a country where most citizens were unaware of it, and unaware of the risks to public health inherent in asbestos mining and manufacturing. In 1962, there were five mining areas registered under the title asbestos, "all of them belonging to the crystalline pre-Cambrian basement, in areas where magnesia basic rocks emerge, represented by stocks of serpentines and amphibolic rocks in which appear sometimes talc sediment."[2] They were:

1. The Province of Catamarca: two mines producing anthophyllite
2. The Province of La Rioja: seven mines producing anthophyllite and chrysotile, and one mine producing chrysotile
3. The Province of San Juan: two mines producing chrysotile and amphiboles
4. The Province of Córdoba: one mine producing chrysotile
5. The Province of Mendoza: five mines producing chrysotile and amphiboles with talc

By 1970, the Ministry of Economy of Mendoza listed 20 asbestos mines, with 14 registered and their production reported annually, and another six registered but without any report of their output. Because the asbestos was of poor commercial quality, the mining of asbestos in Argentina never reached major proportions (Table 1). Thus, while Argentina was mining asbestos, it also was importing about 9,000 tons/year (Table 2).

In 1984, a technical report of the Directorate of Mine Economy and Development stated that Mendoza produced 57.3% of the total asbestos mined in Argentina, with three registered producers and nine mines in activity in Las Heras. By 1998, the Directorate reported that Mendoza and Cordoba mined chrysotile, but not amphiboles. This production continued, with an average of 250 tons/year in Cordoba, until 1994, and in Mendoza until 2000, when the last official reporting took place[3] (Table 3).

Simultaneously, the import of asbestos decreased to about 2,000 tons in 2000. This represents a use of about 60 gr. of asbestos/person/year. Half of the imported asbestos came from Brazil, 25% came from Canada and Zimbabwe, and the last 25% came from about 20 countries on different continents, including at least three that already had banned all forms of asbestos in their

TABLE 1. Mining of Asbestos by Province in Argentina, 1947–1956

Province	Tons
Catamarca	120
Córdoba	18
La Rioja	2,089
Mendoza	871
San Juan	103

Source: National Directorate of Mining and Geology.

TABLE 2. Import of Asbestos by Argentina, 1955–1959

Year	Tons
1955	12,011
1956	5,765
1957	9,622
1958	9,367
1959	8,331

Source: National Directorate of Mining and Geology.

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TABLE 3. Total Production of Asbestos in Argentina, 1990–2000

Year	Córdoba	Mendoza	Total
1990	90	185	275
1991	70	200	270
1992	—	215	215
1993	60	249	309
1994	48	212	260
1995	—	300	300
1996	—	446	446
1997	—	264	264
1998	—	309	309
1999	—	259	259
2000	—	254	254

Source: Under-secretary of Mining, Secretary of Industry and Commerce.

TABLE 4. Total Asbestos Imports (Products and Fibers) to Argentina by Country, 1999

Total asbestos imports	
Brazil	51.69%
Canadá	13.27%
Zimbabwe	12.72%
Other (25 countries)	22.32%
Imports of asbestos fibers	
Canadá	34.13%
Zimbabwe	33.33%
Brazil	31.92%
Other	0.62%

Source: National Customs Administration.

own domains (Table 4). Imported asbestos (registered as fibers and dust by customs officials) accounted for nearly 39% of the total (Table 5). Imported asbestos was analyzed by the National Customs Administration through 1999.[4]

Asbestos was imported by Argentina under a number of commercial names, none of which indicated the true nature of the material or its occupational and environmental hazards. Brazilian asbestos was imported with such commercial names as BA-1081 and U-30. Mexican asbestos had the commercial name Autopac, and a U.S. firm in Pennsylvania used the commercial names E-5307 and E-5326 on products sold in Argentina.

Argentina exported small amounts of asbestos as manufactured products, mainly to other Latin American countries (Table 6). Some raw asbestos was sold to Uruguay, but that was an exception to usual trade practices. Companies in Argentina such as Garin-Pcia.Bs.As. exported asbestos products with commercial names such as Klinger 80 and DS-65, sharing in the global practice of concealing the nature of the materials being exported, and the hazards they presented to purchasers. In recent years, asbestos products have been exported by Argentina to Europe, mainly for use in automobiles in France and Great Britain (countries in which there already existed a ban on commercial use of asbestos).[5]

ASBESTOS INDUSTRY

The profile of Argentina's use of asbestos products does not differ from that of other countries. The automobile industry (including trucks and tractors), shipbuilding, the railroad industry, and the aeronautical industry have used asbestos both in friction products (brakes and clutches) and as gaskets. The asbestos-cement industry, primarily in the production of building boards, tile roofing, water mains, and water tanks, is a major user of asbestos. Many other industries, including the oil and chemical industries, electric power, and numerous domestic producers of rubber, steel, paper, plastic, textile, pharmaceuticals, tobacco, and food, imported and used asbestos.

Argentina registered 113 asbestos companies with 1,156 workers in 2001. These are not reliable numbers. It is not possible with available reporting to know the total numbers of workers exposed to asbestos in recent years (Table 7). A number of companies still produced asbestos products in 2002. Some of them had inventories of asbestos products and wanted to get rid of them before the ban regulation took effect. Despite the many efforts of the government in Argentina, it is strongly suspected that some manufacturing use of asbestos continues at this time.

ASBESTOS-RELATED DISEASES

There have been no official data on asbestos-related diseases in Argentina. These diseases were not incorporated into the scheme of mandatory disease reporting to the National Epidemiological Survey System of

TABLE 5. Asbestos and Asbestos Products Imported by Argentina, 1999

Year	No. Shipments	$US FOB Value	%
Fibers and/or asbestos dust	39	2,116,595	38.83
Sheets for joints in bobbins (rolls)	22	1,869,873	34.30
Joints and other elements with similar function	851	1,075,974	19.74
Pasteboard and felt hats	9	253,415	4.65
Woven materials, threads, and ropes	82	131,344	2.40
Others	4	3,799	0.08
TOTAL	1,007	5,451,002	100.00

Source: National Customs Administration.

TABLE 6. Exports of Asbestos by Argentina, 1999

Country of Import	$US FOB Value	%
Brazil	9,381	45.20
Uruguay	29,887	14.78
Chile	20,977	10.38
Bolivia	17,606	8.70
Paraguay	6,619	3.28
Ecuador	4,365	2.16
Venezuela	2,016	1.00
Peru	944	0.46
Colombia	80	0.04
Total to South America	173,878	86.00
Total worldwide	202,194	100.00

Source: National Customs Administration.

TABLE 7. Numbers of Asbestos Workers by Manufacturing Industry, Argentina, 2001

	No. Companies	No. Workers
Automobile, cars and trucks		
Brake shoes	32	579
Gaskets	15	245
Embragues	5	45
Subtotal	52	869
Asbestos cement	40	460
Chemicals	9	180
Selladores	8	150
Textile	4	47
TOTAL	113	1,156

TABLE 8. Leading Causes of Death, Argentina, 2000

Diseases of circulatory system	91,506
Malignant tumors	55,492
Diseases of respiratory system	31,972
External causes	19,369
Infectious and parasitic diseases	13,009
TOTAL	277,148

Source: National Program on Statistics of Health, Bulletin 95.

the Ministry of Health. The statistical data on mortalities show that malignant tumors are the second leading cause of death in Argentina, and represent approximately 20% of all deaths. Malignant lung tumors represent about 16% of all malignant tumors (Table 8).

The Directorate of Statistics and Information on Health reported pleural malignant tumors during the period 1993–1997, and since 1997 has also listed pleural mesothelioma. There have been an average of 80 cases/year in this time period, with a slight preponderance for males (54.88%) over females (45.12%). The distribution by age shows a major increase of mesotheliomas at age 45, while the number of general pleural malignant tumors begins to increase at age 55. Most these cases are reported in the four major population centers of the country: the Federal District, and the Provinces of Buenos Aires, Córdoba, and Santa Fé (Tables 9 and 10).[6]

Only a few small research studies by epidemiologists and clinicians have been conducted in Argentina:

- Dr. Elena Matos and her colleagues at the Oncology University Hospital Angel Roffo (Buenos Aires city) reported mortality rates for malignant pleural tumors, 194 cases reported from 1989 to 1992.[7] The mortality data do not include information about asbestos exposure.
- A case–control study developed by Dr. Matos and colleagues looked at lung cancer cases. Exposures to asbestos were found in 20% of the 600 cases studied.
- A study was conducted by Dr. A. Labatte, Professor at Buenos Aires University and President of the Occupational Pulmonology Association, between 1984 and 1992. He found 56 persons exposed to asbestos who presented at the University Hospital with respiratory symptoms.[8]
- Dr. A. Casado, an oncologist and pulmonologist at the Vaccareza's Institute, studied patients with lung cancer. Occupational histories of exposure to asbestos were found in 95% of the cases of mesothelioma.[9]
- A case–control study of risk factors for various cancers is being developed in the Angel Roffo Oncology Hospital, funded by the International Agency for Research on Cancer (IARC) and coordinated in Argentina by Dr. Marta Vilensky.

These research and teaching efforts are far from adequate, and have yet to provide any published data. Legislation passed in 1996 codified a list of occupational diseases. In it, pleural plaques, asbestosis, lung cancer, and mesothelioma are to be adjudicated on the basis of occupational exposure to asbestos. Screening tests of asbestos workers are now required, including clinical examinations and pulmonary function tests once a year, and chest x-rays every two years. The level of occupational medical practiced in Argentina appears to misdiagnose or overlook most cases of asbestos-related diseases. All physicians in occupational medicine and pulmonology need further training in the taking of occupational histories that will elucidate the role played by asbestos exposure in cases of lung cancer, and additional training in the diagnosis of pleural mesothelioma.

THE BAN ON ASBESTOS IN ARGENTINA

Although legislation in Argentina recognized pneumoconiosis as an occupational disease as early as 1915, it was not until 1979 that the word asbestos appeared for the first time in Hygiene and Industrial Safety Law 19587. In its appendix, some carcinogens were listed and biological monitoring established. The list included asbestos as a human carcinogen and estab-

lished a permissible exposure limit of 5-fibers/cc of air, adding that in the case of crocidolite, the exposure limit could be more restrictive.

During the 1980s and early 1990s, several regulations were promulgated that referred to carcinogens in general and some specific references to asbestos were made. Regulation 31/89 of the DNHST of the Ministry of Work established the registration of companies using carcinogenic substances at some stage of their process and created a new listing of carcinogenic substances that included asbestos as a human carcinogen.

At the same time, Convention 162 and Recommendation 172 of the International Labor Office (ILO) on asbestos were created but never ratified by Argentina.

In 1990, Regulation DNHST 33 (Ministry of Labor) updated the listing of carcinogenic substances.

In 1991, Resolution 444 of the Ministry of Work updated the permissible exposure levels: crocidolite: 0.2 f/cc, amosite 0.5 f/cc, actinolite, anthophyllite, and tremolite 2 f/cc, and chrysotile 2 f/cc. That same year, Ministry of Labor Resolution 577 regulated the use, handling, and management of asbestos and its wastes. It established the prohibition of pulverization of asbestos in all forms, labeling, protective practices, forms of transportation, final handling, and also the method to determine the ambient exposure levels in the workplace.

Between 1994 and 1997 the following measures were taken:

- Through Regulation 1 of the Ministry of Work, the listing of carcinogens was updated and the requirement for filing exposed workers' clinical histories for 40 years after their employment ended was established.
- As part of new labor legislation, Decree 658 established the List of Professional Diseases, including asbestos as an agent that causes asbestosis, benign pleural lesions (excluding pleurisy, pleural plaques, pericardial plaques, pleural thickening), primary malignant mesothelioma (of the pleura, pericardium, or peritoneum), and primary bronchopulmonary cancer. It established in detail many of the work settings in which asbestos exposures represent risks to workers.
- Resolution 43 of SRT (Ministry of Labor) on Health Examinations established the studies to be carried out in periodic examinations of workers exposed to asbestos, annual tests evaluating pulmonary function, and bi-annual chest x-rays.

During this period, a number of meetings organized by companies and commercial trade organizations promoting the "controlled use" (often referred to as the "safe use") of asbestos took place in Argentina. These efforts to obfuscate the hazards of chrysotile asbestos were not successful in blocking the eventual ban of all forms of asbestos in Argentina, but they did slow down the process.

TABLE 9. Deaths Due to Malignant Tumors of the Trachea, Bronchi, Lungs, and Pleura, and Mesotheliomas, Argentina, 2000

Malignant tumors of trachea, bronchi, and lungs	8,410
Malignant tumors of pleura	60
Malignant mesoteliomas of pleura	20
TOTAL	55,920

Source: Directory of Statistics and information of Health. Ministry of Health. Argentina. June 2002.

TABLE 10. Deaths from Malignant Pleural Tumors, 1993–1996, and Malignant Pleural Tumors and Mesothellioma, Argentina, 1997–2000

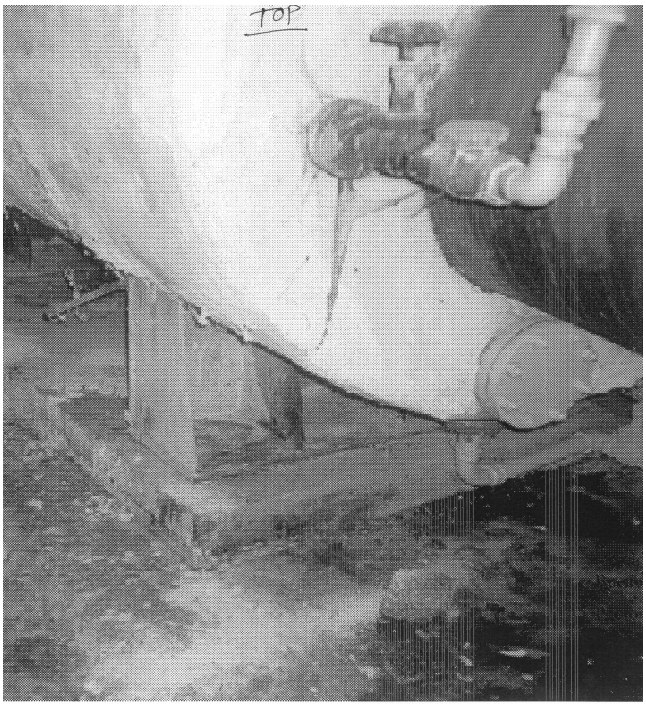
Malignant pleural tumors	
1993	83
1994	97
1995	98
1996	85
Mesotheliomas	
1997	74
1998	55
1999	73
2000	80
TOTAL	645

Source: Directory of Statistics and Information of Health, Ministry of Health, Argentina, 2002.

1997 marked the beginning of the five years of action that led to the ban on asbestos in Argentina. While Mr. Gerard Docquier (a union representative of the Asbestos Institute of Canada) came to Argentina for a political visit to promote the "controlled use" of asbestos, the National Priorities Setting Workshop was convened in Buenos Aires. It was organized by the Ministry of Health and included government representatives in the areas of health, labor, agriculture, and environment from the 24 provinces; delegates from national programs for health, agriculture, foreign relations, commerce and customs, the interior, defense, and the environment; and delegates from nongovernmental areas representing universities, unions, environmenal advocacy groups, consumers, and industry. During the discussion, three of the six roundtables considered asbestos as having national priority. A Technical Task Force was formed to deal with occupational exposures to asbestos.

At this time, a resolution came from the National Congress (senators' chamber), asking for information about the mining and manufacture of asbestos, the regulation and enforcement of exposure standards, prevention measures being taken, research activities being conducted on occupational and environmental exposures to asbestos, and on developing alternatives to the use of asbestos, as well as education and training programs for workers.

The Ministry of Health organized in 1999 a seminar on asbestos, labor, and health, with the participation of



Boilers in the cellar, Caseros Jail, Buenos Aires, 2001.

members of the asbestos industry, workers, government and nongovernmental organizations representing the scientific community, environment organizations, and consumers. It was agreed by the participants that a ban on amphibole asbestos should be recommended, but asbestos industry pressure led to an exception for chrysotile. A committee was formed to look into alternatives to all forms of asbestos.

The year 2000 was rich in activities and achievements. In parallel with the publication of Resolution No. 26 of the Viticulture National Institute (that banned the use of asbestos in the wine industry), Resolution No. 845 of the Ministry of Health was passed, banning the mining, manufacture, import, commerce, and use of all amphibole asbestos in the entire country.

Invited by the European Union–PIC Project and the German Co-operation Technical Agency (GTZ), the Technical Task Force went for training and exchange of information to Germany and Holland. The issues of interest were:

- Asbestos regulation, control measures, man-made fibers and their substitutes, and exchange of information about chemical risk analysis in Germany (Federal Ministry of Social Work issues—Department of Dangerous Substances, Chemical Safety Biological Technology and Genetics in Bonn and Federal Institution for Labor Protection and Occupational Medicine in Dortmund)
- Joint efforts in the framework of the Rotterdam Treaty (the Deutsche Institute for Environment and Public Health, and delegates of the DNA in Ministry of Environment for PIC, in Holland). The Technical Task Force learned of the Rotterdam Convention (FAO/UNEP) Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. Argentina was a signatory country, and the Ministry of Health already was working with the Ministry of Foreign Relations to incorporate asbestos as one of the substances in the Rotterdam Convention.

The Technical Task Force learned more about the importance of banning chrysotile asbestos by participating in the Global Congress on Asbestos held in Osasco City, Brazil. Both Technical Secretaries of the Ministry of Health made the decision to create a Committee on Chrysotile.

A second seminar on updating asbestos, labour and health was organized by the Ministry of Health. Dr. Bernd Westerfeld**,** Chief of the Laboratory of the Federal Office for Worker Protection of Hamburg, Germany, made a presentation on the removal of asbestos from buildings. His presentation emphasized the need to move ahead with the environmental protection that asbestos abatement can provide to the general community.

During 2001, the Ministry of Health conducted several national forums to provide information about asbestos to a number of key organizations: the Argentine Construction Chamber, the Construction Workers' Union, the Foundation for Education and Training for Construction Workers, the International Federation of Workers of Construction, the International Meeting on Construction Materials and Technology, the National Congress of Environmental Medicine, and the pubic defense agency of Buenos Aires City. New meetings took place with local chambers of industries (Rioplatense Association of Asbestos, the Argentine Association of Motor Parts, Chemical Industry Chamber, Federal Chamber of Domestic Devices, and others) to listen to their proposals about the time required for asbestos to be phased out, and the time they needed to adopt asbestos substitutes without impeding commercial commitments and damaging their companies.

Following these meetings, a final report was made by the National Advisory Committee on Chrysotile Asbestos. Resolution 823 of the Ministry of Health was signed, forbidding within the country the mining, import, manufacture, and use of all forms of asbestos, including chrysotile asbestos, and products containing asbestos, as of January 1, 2003. The prohibition for textile-asbestos products, paper and asbestos cardboard, asbestos rubber, and asbestos plastic, as well as filters, sealants, pastes, paints, and insulators containing asbestos, came into force 60 days after the publication of the Resolution.

The commercial use of products containing asbestos will be authorized during a term no longer than a year,

unless the impossibility of its replacement or the nonexistence of alternatives in the market is proved. After that period, the authorization may be renewed if the conditions that allowed the initial permission persist.

The Parliament in Argentina proudly declared "legislative interest," welcoming Resolution 823/2001 and establishing that "the State cannot delegate the responsibility of guaranteeing to its people that the substances used in the production of goods destined to final consumers may not compromise their security in foreseeable conditions of use."

At the Latin American Asbestos Meeting organized by the Ministry of Health, PAHO/WHO, GTZ, and ABREA, government representatives from 11 Latin American countries (Argentina, Brazil, Costa Rica, Cuba, Chile, Ecuador, Nicaragua, Paraguay, Peru, Uruguay, and Venezuela) participated, and nongovernmental representatives from some of these countries, Mexico, Panama, and seven countries of Europe, North America, and Asia also took part.

In the opening speech, the Director General of the Pan-American Health Organizaton, Dr. George Aleyne, said: "When we discuss environmental issues, we often dwell on esoteric things, but we must pay special attention to things such as asbestos because it affects so many lives and causes so many deaths in Americans. . . . There is no doubt about the harmful effects of this fiber."

Dr. Héctor José Lombardo, Minister of Health, said: "God willing, the consciousness-raising that has occurred at this meeting and the many proposals that will be carried out to prevent further exposure to asbestos will lead us to a better world, a world where the priority is a higher quality of life for each of its people, where the community nurtures and protects life, health, and the security of our people, and where at no time economic, sectarian, or group interests do anything that may be detrimental to health."

The Letter of Buenos Aires summarized the conclusions of the Latin American Asbestos Meeting:

- Health is a fundamental right of all people.
- Asbestos is a public health problem, and its use by our people must be considered an indicator of inequity.
- Asbestos must be recognized as a human carcinogen, with no safe threshold of exposure.

This was proposed as a first meeting of a permanent Latin American Forum, with the longer-term goal of banning asbestos throughout the continent. There was agreement that all Latin American countries must seek to end the practice of double standards in occupational health and safety, inequities in compensation to asbestos victims, the transfer of hazardous materials and technologies, and the lack of information provided to workers and to the community that foster a disadvantage to public health.[10–14]

Much remains to be done. There is no asbestos victims' organization in Argentina similar to ABREA in Brazil, ANDEVA in France, WLO in the United States, and so many others around the world. This ought to be an important objective of public health agencies and NGOs in Argentina.[15–18] Banning asbestos in Argentina does not erase the problem of asbestos-related diseases. Occupational and environmental exposures will remain for many years, and the cancers begun by exposures in the past will be a challenge to the country for decades.[19–21]

The Women

I end this report with a homage to the many women (scientists, politicians, workers, victims) who have fought, and still fight, for the right to health, the right to life, and a world without asbestos. It is not possible to mention them all, but I would like to give special thanks to the following women for what they have shown me, not only that a world without asbestos is possible, but that another world is possible:

Guadalupe Aguilar Madrid
Institute of Social Insurance, Mexico

Eva Delgado Rosas
Asbestos and Labour Risks Research Program, Peru

Ana Digon
Chief, Chemical Risks Program. Ministry of Health, Argentina

Fernanda Giannasi
Citizen's Network for Banning Asbestos in Latin America, Brazil

Maria Elisa Leon Carrasco
Department of Occupational Health. Ministry of Health, Chile

Laurie Kazan-Allen
International Ban Asbestos Secretariat, U.K.

Annie Thebaud-Mony
Ban Asbestos World Network, France

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