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EMISSION STUDY OF INDUSTRIAL SOURCES OF LEAD AIR POLLUTANTS 1970

by

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OTHER SOURCES OF LEAD EMISSIONS

FERROALLOYS

During this study a search revealed that very little data is available regarding lead emissions resulting from ferroalloy processing. Emission factors for particulate have been established and studies have been conducted covering the effectiveness, cost, and use of air pollution controls. The area where more information is needed concerns the quantity of lead in the particulate.

The effluent from a ferromanganese blast furnace is reported to be a greater air pollution probelm than that from an iron blast furnace [1]. It is said to be the most prolific pollution producer of any of the metallurgical processes [2]. A particulate emission factor of 410 pounds per ton (uncontrolled) has been established for the ferromanganese blast furnace operations, while the emission factor for electric furnaces is 45 pounds per ton [3]. For silicomanganese production in

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1- Thring, N. W. and Sarjant, R. J.; "Dust Problems of the Iron and Steel Industry"; Iron and Coal Traders Rev.; 174; Mar. 29, 1957.

2- Wurts, T. C.; "Industrial Sources of Air Pollution - Metallurgical"; Public Health Service Publ. No. 654; 1959.

3- "Compilation of Air Pollutant Emission Factors (Revised)"; U. S. Environmental Protection Agency; Research Triangle Park, N. C.; Office of Air Programs; Publ. No. AP-42; Feb., 1972.

electric furnaces the emission factor is 195 pounds per ton [1].

Information obtained from industry indicates that typical emissions from silicomanganese furnaces contain about 0.45 percent lead, while those from ferromanganese furnaces contain 0.90 percent [2].

During 1970 the production of silicomanganese and ferromanganese [3] was as follows:

Silicomanganese	- 119,000 tons
Ferromanganese	
Blast Furnace	- 501,000 tons
Electric Furnace	- 334,000 tons

Based on the above information the lead emissions for 1970 are estimated as follows:

	Lead Emissions
Production of silicomanganese (50 percent control)	- 25 tons
Production of ferromanganese	
Electric Furnace (40 percent control)	- 40 tons
Blast Furnace (99 percent control)	- 10 tons
	75 tons

1- "Compilation of Air Pollutant Emission Factors (Revised)"; U. S. Environmental Protection Agency; Research Triangle Park, N. C.; Office of Air Programs; Publ. No. AP-42; Feb., 1972.

2- Private communication.

3- Minerals Yearbook; Bureau of Mines; 1970 Preprint.