

Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

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EMISSION STUDY OF INDUSTRIAL SOURCES OF LEAD AIR POLLUTANTS 1970

by

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CONTENTS

PREFACE

ACKNOWLEDGEMENTS

INTRODUCTION	1
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SUMMARY	2
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Emissions by Source	3
Emissions by States	4
Emission Factors	5

SOURCES OF LEAD	8
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MATERIAL FLOW THROUGH THE ECONOMY	11
---	----

Chart	12
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USES AND EMISSIONS OF LEAD

Mining and Milling	14
Metallurgical Industries	18
Primary Lead	18
Primary Copper	27
Primary Zinc	29
Secondary Lead	33
Lead Oxide	40
Consumer Product Manufacturing	45
Storage Batteries	46
Gasoline Additives	54
Pigments	62
Ammunition	73
Solder	77
Cable Covering	82
Type Metal	85
Brass and Bronze	89
Bearing Metals	92
Metallic Lead Products	95
Miscellaneous	97

OTHER SOURCES OF LEAD EMISSIONS

Waste Incineration	99
Waste Oil	99
Municipal Incineration	101
Sewage and Sludge Incineration	103
Coal	105
Oil	109
Iron and Steel	112
Grey Iron Foundries	115
Ferroalloys	117
Cement Plants	119
UPDATING OF EMISSION ESTIMATES	121

FERROALLOYS

During this study a search revealed that very little data is available regarding lead emissions resulting from ferro-alloy 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 problem 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

1- Thring, N. W. and Sargent, 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 ¹/₁.

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 ²/₁.

During 1970 the production of silicomanganese and ferromanganese ³/₁ 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:

	<u>Lead Emissions</u>
Production of silicomanganese (50 percent control)	- 25 tons
Production of ferromanganese	
Electric Furnace (40 percent control)	- 40 tons
Blast Furnace (99 percent control)	- <u>10 tons</u>
	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.