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Technical specifications for waste gas control of lead smelting

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(English Translation)

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Foreword

In order to implement the Environmental Protection Law of the People's Republic of China and the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, Lead smelting exhaust gas treatment project construction and operation management, prevention and control of environmental pollution, environmental protection and human health, the development of this standard quasi.

This standard specifies the technical requirements for the design, construction, acceptance, operation and maintenance of lead smelting exhaust gas treatment works this standard is a guiding standard.

This standard is the first release.

This standard is organized by the Ministry of Environmental Protection Science and Technology Standards Division.

The main drafting unit of this standard. Yunnan Asia-Pacific Environmental Engineering Design and Research Co., Ltd., Kunming Metallurgical Research Institute, Kunming Nonferrous Metallurgical Design and Research Institute, Yunnan Chihong Zinc and Germanium Co., Ltd.

The Environmental Protection Department of this standard approves on November 20, 2015.

This standard has been implemented since January 1, 2016.

This standard is explained by the Ministry of Environmental Protection.

Technical specification for waste treatment of lead smelting

1 Scope of application

This standard specifies the technical requirements for the design, construction, acceptance, operation and maintenance of lead smelting exhaust gas treatment works.

This standard applies to lead concentrate as raw material lead smelting process of waste gas generated by the governance project can be used as environmental impact assessment Price, engineering consulting, design, construction, acceptance and operation and management of the technical basis.

This standard does not apply to the treatment of renewable lead smelting waste gas.

2 Normative reference documents

The contents of this standard refer to the terms of the following documents. For those who do not specify a date, the valid version applies to this standard

General rules for safety and hygiene of production equipment GB/T 12801 General requirements for safety and hygiene of production processes Safety and hygiene practices for lead Determination of particulate matter and sampling method of gaseous pollutants in exhaust gas of fixed pollution sources GB/T 16157 Technical specification for lead smelting and dust - proof and anti - virus Standard for Hazardous Waste Storage Pollution Control Standard for Pollution Control of Storage and Disposal Site for General Industrial Solid Waste GB 20424 Limits for Hazardous Elements in Heavy Metal Concentrate Products Ecological indicators of arsenic, cadmium, lead, chromium and mercury in fertilizers GB/T 23349 Emission standard for lead and zinc industrial pollutants Code for fire protection of building design GB 50016 Code for design of heating, ventilation and air conditioning GB 50019 Code for design of corrosion protection for industrial buildings GB 50046 Code for design of noise control for industrial enterprises GB/T Specification for general graphic design of industrial enterprises GB 50187 Code for construction of building anti - corrosion engineering GB 50212 Uniform Standard for Acceptance of Construction Quality of Industrial Installation Engineering GB 50252 Code for construction and acceptance of low - voltage electrical appliances GB 50254 electrical installations Code for construction and acceptance of wind turbines, compressors and pumps Uniform Standard for Acceptance of Construction Quality of Construction Engineering Code for fire protection of non - ferrous metal engineering design GB 50630 Code for design of dust collection for non - ferrous metal smelter GB 50753 Code for design of acid - making process for smelting flue gas GB 50880 Code for design of lead and zinc smelter GB 50985 Code for design of environmental protection engineering for non - ferrous metal industry GB 50988 Standard for Designing Hygienic Standards for Industrial Enterprises Occupational exposure limits for workplace hazards - Part 1. Chemical harmful factors Occupational exposure limits for workplace hazards Part 2. Physical factors HJ/T 48 smoke and dust sampler technical conditions Technical Guidelines for Unorganized Emissions Monitoring of Air Pollutants Technical Specification for

Continuous Monitoring of Flue Gas Emissions from Fixed Pollution Sources of HJ/T 75
Technical Requirements and Testing Methods for Continuous Monitoring System of Flue
Gas Emission from Fixed Pollution Source Technical specification for quality assurance and
quality control of fixed pollution source monitoring Technical specification for HJ/T 397 fixed
source exhaust gas monitoring Technical specification for wet flue gas desulfurization of
industrial boilers and furnaces "Construction Project (Project) Completion Acceptance
Management Measures" (No. [1990] No. 1215)

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Lead smelting waste gas

Refers to the lead smelting process generated by the various substances containing harmful substances.

Desulfurization efficiency desulfurization efficiency Refers to the flue gas desulfurization before and after the standard state of dry flue gas (excluding moisture in the flue gas) SO₂ concentration difference and desulfurization before the standard State in the dry flue gas SO₂ concentration percentage.

3.3 Environment foggy foggy gas collecting

Refers to the system design, the melting furnace, blast furnace, smoke furnace, scum treatment furnace, casting slag and casting machine and other feeding Mouth, outlet and out of the mouth of the smoke and other emissions of the collection process.

4.1 Sources and Classification of Pollutants

4.1.1

lead smelting process of waste gas mainly include all kinds of sulfur-containing dust, dust, sulfuric acid mist, electrolytic acid mist.

A) sulfur-containing dust is mainly produced in the lead concentrate sintering, melting, reduction, slag treatment and other processes. The main pollutants are particles Sulfur dioxide, and lead, zinc, arsenic, thallium, cadmium, mercury and other heavy metals and compounds.

B) dust-containing gases are mainly produced in the process of loading and unloading, transportation, batching, granulation, drying, feeding and lead melting, ingot and other processes, the main pollutants are particulate matter.

C) sulfuric acid mist mainly produced in the acid-making process, the main pollutants for sulfuric acid.

D) electrolytic acid mist produced in the lead electrolysis workshop, the main pollutant is fluorosilicic acid.

4.2 Pollution load

4.2.1

The amount of flue gas in the lead smelting process is determined by actual measurement. All kinds of exhaust gas discharged from each process can be exhausted Measurement, exhaust emissions measurement should be consistent with HJ/T 55, HJ/T 75, HJ/T 76 requirements.

4.2.2

If there is no actual measurement data, the exhaust emissions can be similar to the same scale of production, similar raw materials and products or similar processes of the emission data is determined or determined by material balance.

4.2.3

Lead Smelting Process Flue gas emissions can be checked by the data given by reference formula (1) or Table 1.

Where.

Q - flue gas discharge equipment hour exhaust emissions (m³/h);

P - Emission of pollutants from a flue gas exhausting equipment (kg) during the calculation period;

C - the average concentration (mg/m³) of a pollutant monitoring period for a flue gas discharge equipment;

F - Production load (%) during the monitoring period of a flue gas discharge equipment;

T - the number of hours of production (h) of a flue gas discharge equipment during the calculation period;

Table 1 Source and concentration of pollutants in lead smelting exhaust gas (mg/m³)

Exhaust gas Source	Source	Particle concentration	SO ₂ (Volume concentration%)	Lead and its combination	Mercury and its compounds	Dusty smoke	Raw material preparation, transportation and so on process
5000 ~ 10000	1400 ~ 3000	50 ~ 250	Sulfur	Flue gas sintering	Flue gas ISP sintering machine	25000 ~ 40000	an average of 1.0 to 6.0 minimum 0.2, the use of oxygen-rich technology Up to 10 or more
Smelting furnace	150000 ~ 250000	5	General requirements				