

ICS 13.020
CCS Z 61

HJ

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

HJ 558-2010

Cleaner production standard. Copper smelting industry

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(English Translation)

Issued on: February 1, 2010

Implemented on: May 1, 2010

Issued by: Ministry of Ecology and Environment

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Foreword

To implement the "People's Republic of China Environmental Protection Law" and "People's Republic of China Cleaner Production Promotion Law," to protect the environment as a copper smelting Refining enterprises to carry out clean production to provide technical support and guidance, the development of this standard.

This standard provides the basis to achieve the national and local emission standards, according to current industry technology, equipment and management Level of copper smelting enterprises cleaner production - General requirements. This standard is divided into three levels, a representative of the international advanced level of clean production, two representatives Domestic advanced level of clean production, three representatives of the domestic basic level of clean production. As technology continues to progress and development, the standard will be timely Amendments.

This standard is the first release.

This standard is developed by the Ministry of Environmental Protection Science, Technology organization.

This standard was drafted. Hunan Nonferrous Metal Research Institute, Chinese Academy of Environmental Sciences.

This standard MEP February 1, 2010 for approval.

This standard since May 1, 2010 implementation.

The standard explanation by the Ministry of Environmental Protection.

Cleaner production standard copper smelting industry

1 Scope

This standard specifies the general requirements for clean production of copper smelting industry. This standard clean production standard indicators into six categories, namely, the production process and Equipment requirements, resource and energy usage targets, product index, pollutant indicator (prior to the end of treatment), waste recycling and the environment Management requirements.

This standard applies to the main raw material of copper sulphide concentrate copper pyrometallurgical business (not including copper scrap as the main raw material of copper smelting Enterprise, nor wet copper smelting enterprises) judgment cleaner production audits, cleaner production potential and opportunities, and cleaner production performance Assessment and clean production performance disclosure system for environmental impact assessment, waste discharge permit management, environmental management systems.

2 Normative references

The standard content of the following documents cited in the articles. For undated references, the effective version applies to this standard.

GB 11914-89 Determination of Chemical Oxygen Demand Quality dichromate method GB 18599-2001 general industrial solid waste storage and disposal site pollution control standards GB 18597-2001 Standard for Pollution Control on Hazardous Waste Storage GB 21248-2007 copper smelting enterprises of energy consumption per unit product GB/T 534-2002 industrial sulfuric acid GB/T 16157-1996 stationary source emission of particulates and gaseous pollutants measured sampling methods GB/T 24001 Environmental management systems - Requirements with guidance for use HJ/T 56-2000 Determination of stationary source emission of sulfur dioxide Iodometry Determination of HJ/T 57-2000 stationary source emission of sulfur dioxide constant potential electrolysis YS/T 70-2001 blister YS/T 441.1-2001 balance of non-ferrous metal smelting management practices copper beneficiation section "Clean Production Audit Interim Measures" (National Development and Reform Commission, the State Environmental Protection Administration Order No. 16 of 2004) "Copper smelting industry access" (National Development and Reform Commission Announcement No. 40, 2006) "Pollution automatic monitoring and management approach" (SEPA Order No. 28)

3 Terms and Definitions

The following terms and definitions apply to this standard.

3.1 Cleaner production cleaner production

Refers constantly taken to improve the design and use of clean energy and raw materials, the use of advanced technology and equipment, improve management, utilization and other measures to reduce pollution at source, improve resource utilization efficiency, reduce or avoid production of production, services and products to use during Pollutants Health and emissions, in order to reduce or eliminate human health and the environment.

3.2 Smelting procedure

Means containing copper concentrates with the appropriate amount of flux, back to dust, fuel, air or oxygen-enriched air into the molten material, oxygen and fine Elements occur within the mine complex series of physical and chemical reactions to produce flue gas, copper matte (matte) and process slag containing sulfur dioxide (SO₂).

3.3 Blowing procedure

It refers to the matte bubbling air or oxygen-enriched air, which will of iron, sulfur and other harmful impurities removed to obtain a blister copper oxide and Precious metal enrichment in the metallurgical process to blister.

3.4 Fire refining pyro-refining procedure

Refers to the blister copper as raw materials under high temperature to melt copper drum into the air, so that the melt copper impurities and oxygen in the air oxidation reaction to Form of the metal oxide into the slag and then melting hydrocarbon reducing agent to remove oxygen in the copper, and finally cast into the anode qualified metallurgical too Away.

3.5 Flash smelting flash smelting

Refers to the small particle size copper sulphide concentrate with dry and oxygen-enriched air huge surface area, injected into the reaction space temperature, the suspension in air oxidation Gas, copper concentrate particles at high temperature speedy completion of the metallurgical reaction, producing copper matte, slag and metallurgical processes sulfur dioxide-containing flue gas.

3.6 Bath smelting bath smelting

Refers to the small copper sulphide concentrate added to the melt, while the melt by bubbling air or oxygen enriched air, metallurgical smelting process.

3.7 pollutant indicator (prior to the end of the process) pollutants generation indicators (before end-of-pipe treatment) that pollutants producing coefficient, refers to the production (or processing) process unit of the product, the amount of pollutants generated (before the

end of the process). This standard Water pollutants and air pollutant indicator. Water pollutants indicators, including the volume of effluent sewage treatment plant inlet and types of pollutants, Unit product amount or concentration of pollutants, mainly for copper smelting process wastewater COD generation. Atmospheric pollutants means Exhaust gas volume and types of pollutants landmarks include the exhaust gas treatment means inlet, amount or concentration of pollutants, including sulfur dioxide, soot and work Industry dust.

4.1 Index rating

This standard gives the total copper smelting production process cleaner production level three technical indicators.

A. the international advanced level of clean production;

Class 2. domestic advanced level of clean production;

Three. clean domestic production of basic levels.

4.2 Index requirements

Copper smelting enterprises cleaner production technical requirements are shown in Table 1.

Table 1 copper smelting industry clean production technical requirements

Cleaner Production Index Level One Two Three First, the production technology and equipment requirements 1. The main smelting process uses oxygen-enriched or oxygen-enriched bath smelting flash smelting process uses without prejudice "copper smelting industry access" smelting process Spoil copper smelting process eventually /% ≤ 0.6 ≤ 0.7 ≤ 0.8 flue gas sulfur dioxide (SO₂) content /% ≥ 20 ≥ 10 ≥ 6 Step blister blowing sulfur /% ≤ 0.1 ≤ 0.2 ≤ 0.4 furnace/d ≥ 240 ≥ 150 ≥ 80 Refining process Reverberatory furnace Refining cycle/h ≤ 10 ≤ 15 ≤ 20 Overhaul furnace/a ≥ 10 ≥ 8 ≥ 4 Slag rate of fuel /% ≤ 1.0 ≤ 2.5 ≤ 4.5 fired /% ≤ 2.5 ≤ 4 ≤ 8 Rotary kiln refining cycle/h ≤ 6 ≤ 8 ≤ 12 residue rate of fuel /% ≤ 3 ≤ 4.5 ≤ 6 2. Acid II to double absorption process (or three turn three suction), the conversion rate $\geq 99.8\%$ Withdrawing the second turn two (or three turn three Suction), the conversion rate $\geq 99.6\%$ Withdrawing the second turn two (or three turn three suction) or other line with national industrial policy Technology, the conversion rate $\geq 99.5\%$ 3. Scale (Single System)/ten thousand t ≥ 12 ≥ 10 CONTINUED Cleaner Production Index Level One Two Three 4. Collection and treatment of waste gas furnace tightly closed, preventing the escape of exhaust gas measures. Exhaust gas generated in the prone position with fugitive emissions gas collection devices and supporting purification facilities 5. Allocations use of closed or prevent the scattering storage, the storage warehouse with ventilation facilities; the use of belt conveyor, fully enclosed transport corridors or other enclosed all-transporting means Second, the use of resources and energy indicators 1. Product Engineering Unit Arts and energy Blister (fold of