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**Technical specifications for dry-detoxification treatment and
disposal of chromium residue
(English Translation)**

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Foreword

To implement the Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, and China Law of the People's Republic of China on Prevention and Control of Water Pollution, standardizing the construction of engineering and operation of facilities for the detoxification treatment and disposal of chromium slag, and realizing chromium slag Harmless treatment and disposal, improve environmental quality, and develop this standard.

This standard specifies the general requirements, process design, testing and process control, auxiliary engineering, and process of chromium slag dry detoxification treatment and disposal project.

Technical requirements for labor safety and occupational health, construction and environmental protection acceptance, and project operation management.

This standard is the first release.

This standard was formulated by the Science and Technology Standards Department of the Ministry of Environmental Protection.

This standard is mainly drafted by. Liaoning Academy of Environmental Sciences, CITIC Jinzhou Ferroalloy Co., Ltd., Shenyang Environmental Science Research Institute, Northeastern University.

This standard was approved by the Ministry of Environmental Protection on March 19, 2012.

This standard has been implemented since June 1, 2012.

This standard is explained by the Ministry of Environmental Protection.

Technical specification for dry detoxification treatment and disposal of chromium slag

1 Scope of application

This standard specifies the general requirements, process design, testing and process control, auxiliary engineering, and process of chromium slag dry detoxification treatment and disposal project.

Requirements for labor safety and occupational health, construction and environmental protection acceptance, operation management, pollution control and environmental management.

This standard applies to the chromium residue dry detoxification project, as environmental impact assessment, feasibility study, design and construction, completion acceptance, ring

Technical basis for environmental protection acceptance and operation and management after completion.

2 Normative references

The contents of this standard refer to the terms in the following documents. For undated references, the valid version applies to this standard.

GB 4387 Industrial Enterprise Safety Regulations for In-plant Transportation GB 8978 Integrated Wastewater Discharge Standard General rules for safety and health requirements of GB 12801 production process GB 18597 Hazardous Waste Storage Pollution Control Standard GB 18599 General industrial solid waste storage and disposal site pollution control standards GB 50019 Heating, Ventilation and Air Conditioning Design Code GB/T 50326 Construction project management specification GBZ 1 industrial enterprise design hygiene standard GB J 87 Industrial Enterprise Noise Control Design Specification HG/T 20566 rotary kiln design regulations HJ/T 301 Technical Regulations for Environmental Protection of Chromium Slag Pollution Treatment (Provisional) General technical conditions for JB/T 6811 industrial furnace kiln microcomputer control device JC/T 357 Mechanical shaft kiln for cement industry

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Dry-detoxification to chromium residue

The rotary kiln or the vertical kiln is used as a calcining device, and the hexavalent chromium in the chromium slag is reduced to trivalent chromium by using a reducing substance at a high temperature.

The process of fixing it at room temperature.

3.2 Dry-detoxified chromium residue

After high-temperature reduction treatment in a special facility, it can be used as non-toxic waste for comprehensive utilization or other final disposal of chromium residue.

4 Contaminants and pollution loads

4.1

Chromium slag is generally loose, irregular solid powder, granular or small pieces, the overall color is gray or black and mixed with yellow or yellowish brown; after a long time in the open air, there is obvious yellow matter oozing out and the exudate is yellow.

4.2

The chemical composition of chromium slag is shown in Table 1. The sample should be sampled and analyzed before design, and the measured results should be used as the engineering design basis.

Table 1 Main chemical components of chromium slag

Composition (%)	SiO ₂	Al ₂ O ₃	CaO	MgO	Fe ₂ O ₃	Cr ₂ O ₃	hexavalent chromium	Content range
	4~11	6~10	2~35	15~33	7~25	2~9	0.5~2	

4.3

Density and corrosivity of chromium slag shall be tested in accordance with HJ/T 301-2007 "Technical Specifications for Environmental Protection of Chromium Slag Pollution Treatment" 5.4.

4.4

The engineering design is based on the actual amount of chromium slag. If there is no data, it can be estimated according to Table 2.

Table 2 Production of chromium slag in different chromium compound production processes

Chromium compound products	Production process has calcium roasting, less calcium roasting, no calcium roasting	Non-kiln method (containing calcium chromium residue)
Chromium slag (t)/sodium dichromate (t)	1.5 or more	0.8 to 1.5
	0.8 or less	0.4 to 0.6

5.1 General provisions**5.1.1**

The design of the chromium slag dry detoxification treatment and disposal project shall comply with the current national laws, regulations and standards, in addition to complying with this standard.

The relevant provisions of the specification.

5.1.2

Encourage the comprehensive utilization of chromium slag, and the comprehensive utilization of chromium slag must be based on the premise of harmlessness.

5.1.3

Detoxification chromium slag should meet the relevant provisions of Appendix D of HJ/T 301-2007 "Technical Specifications for Environmental Protection of Chromium Slag Pollution Control".