

The Tenth International Conference on Waste Management and Technology (ICWMT)

Pollution status and environmental sound management (ESM) trends on typical general industrial solid waste

Yuqiang Liu^a, Dewei Guo^b, Lu Dong^{a,*}, Ya Xu^a, Jingcai Liu^a

^aResearch Institute of Solid Waste Management, Chinese Research Academy of Environment Sciences, Beijing 100012, China

^bChina University of Mining and Technology, Beijing 100083, China

Abstract

General industrial solid waste is an important part of solid waste, but it has not get people's attention for a long time. There is no specific regulation or relevant technology standards for the safety protection of general industrial solid wastes in China. A lot of general industrial solid wastes were generated in China every year, which will pollute the soil, ground water, air and human's health seriously if not properly treated. Based on waste yield and hazards, some typical industrial wastes such as tailings, gangue, acidic waste rock, fly ash, smelting waste slag and phosphogypsum were selected to discuss the pollution status, regulation problems and environmental sound management trend. The result indicates that, the current national standard system has many problems in the management scope and requirement. It is urgent to revise the provision of "national standard for pollution control on the storage and disposal site of general industrial solid waste", such as site selection, admission, design, construction, operation, closure and other technical requirements, in order to improve the environmental sound management (ESM) trend on typical general industrial solid waste. Besides, increasing technological upgrading, developing new materials and improving the comprehensive utilization were also proposed.

© 2016 Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of Tsinghua University/ Basel Convention Regional Centre for Asia and the Pacific

Keywords: general industrial solid waste; hazards; management ; standard; trend

1. Introduction

General industrial solid waste is an important part of industrial solid waste, including fly ash, slag, smelting waste slag, tailings, gangue, sludge, etc. ^[1] Those wastes are common in China and the generation is very huge. China has established a large number of storage and disposal sites by refer the foreign experience. Most of the general industrial solid wastes were usually stored openly. Although the related financial and technical input has been increased in recent years, the huge gape still exists in the comprehensive utilization of the general industrial solid waste between the

developed countries and China. In the year of 2012, that the output of general industrial solid waste reached 3.29 billion tons, including 2.03 billion tons of comprehensive utilized amount, 708 million tons of treated amount, and 598 million tons of stored amount according to the data of “China Environment Statistical

* Dong Lu. Tel.: 01084915276;
E-mail address: donglu@139.com

Yearbook 2012”. Treated amount refers to the amount of industrial solid waste burnt or eventually placed comply with the requirements of pollution control regulation and no longer be utilized again. Stored amount refers to the amount of industrial solid waste that stored temporarily or stored in the special storage facility or other centralized stockpiling place. ^[2]

Table 1.1 generation and treatment status of national general industrial solid waste (unit: 10 kilo-tons)

Year	Generation	Emission	Utilization	Storage	Disposal
2001	87794	2891.9	46848	29876	14262
2002	93509	2633.3	49669	29657	16376
2003	99258	1940.7	55613	27244	17376
2004	119035	1760.9	67393	25669	26360
2005	133287	1654.4	76497	27539	30920
2006	150457	1282	92035	22131	42594
2007	174553	1196.9	109661	23965	41004
2008	188770	781.93	122663	21687	47902
2009	202513	710	137355	20710	47060
2010	239357	498	160795	23752	56751
2011	322722	433	195214	60424	70465
2012	329044	144	202461	59786	70744

These long-term stockpiling of waste will not only take up a lot of our resources, meanwhile, it can release large amounts of toxic and hazardous substances to the surrounding such as heavy metals, acidic and alkaline water, pungent gas, dust, etc. The toxic substance release process is relatively slow with a lag, which cause the potential and persistent threats to the environment. It is estimated that a lot of general industrial solid wastes have caused hazard to human health and surrounding environment which were exposed to the environment without effective treatment.

This article analyzed the latest amount statistics, relevant state policies and regulations, management and operation status of storage and disposal site on several typical general industrial solid wastes. The key problems in environmental management were discussed, and the future environmental sound management (ESM) trend was also proposed.

2. Pollution situation and management status of typical general industrial solid wastes

Typical general industrial solid wastes with a large quantity and relatively cause serious environmental pollution problems in China including tailings, fly ash, phosphogypsum, gangue, acidic waste rock, smelting waste slag and carbide slag, etc. Smelting waste slag consists of blast furnace slag, steel slag, ferroalloy slag and non-ferrous metal slag ^[3]. At present, the domestic production of industrial solid waste is still high and the responsibility management system is not clear, which lead to the great damage of ecological environment, and human health. The general situation of typical general industrial solid waste was summarized as follows:

Download English Version:

<https://daneshyari.com/en/article/4401593>

Download Persian Version:

<https://daneshyari.com/article/4401593>

[Daneshyari.com](https://daneshyari.com)