

HJ

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**Technical specifications for industrial organicwaste gas
treatment by regenerative thermal oxidation**
(English Translation)

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Foreword

To implement the "Environmental Protection Law of the People's Republic of China", "The Air Pollution Prevention Law of the People's Republic of China" and other laws and regulations, Pollution, improve the quality of the ecological environment, regulate the construction and operation management of industrial organic waste gas treatment projects, and formulate this standard.

This standard specifies the technical requirements for the design, construction, acceptance and operation and maintenance of industrial organic waste gas heat storage combustion method treatment projects.

This standard is a guiding standard.

This standard is issued for the first time.

This standard was formulated by the Department of Science, Technology and Finance, and the Department of Regulations and Standards of the Ministry of Ecology and Environment.

The main drafting organizations of this standard. China Environmental Protection Industry Association, Beijing Research Institute of Environmental Protection, Jiangsu China Electricity Union Ruima Festival Energy Technology Co., Ltd., Enguo Environmental Protection Technology (Shanghai) Co., Ltd., Yangzhou Hengtong Environmental Protection

Technology Co., Ltd., Kemaike (Hangzhou) Environmental Insurance Equipment Co., Ltd.

This standard was approved by the Ministry of Ecology and Environment on January 13, 2020.

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This standard is interpreted by the Ministry of Ecology and Environment.

Technical specification for industrial organic waste gas treatment engineering by regenerative combustion method

1 Scope of application

This standard specifies the technical requirements for the design, construction, acceptance, and operation and maintenance of industrial organic waste gas treatment projects using regenerative combustion.

This standard is applicable to the construction and operation management of industrial organic waste gas treatment projects using regenerative combustion, and can be used as environmental impact assessment, Reference basis for engineering consultation, design, construction, acceptance, and operation and management of environmental protection facilities after completion.

2 Normative references

The content of this standard refers to the terms in the following documents. For undated references, the latest version is applicable to this standard.

GB 912 Carbon structural steel and low-alloy structural steel hot-rolled sheet and strip
GB 2893 safety color
GB 2894 Safety signs and guidelines for their use
GB/T 3003 Refractory ceramic fiber and products
GB/T 3077 Alloy structural steel
GB 4053.1 Safety requirements for fixed steel ladders and platforms Part 1: Steel straight ladders
GB 4053.2 Safety requirements for fixed steel ladders and platforms Part 2: Steel inclined ladders
GB 4053.3 Safety requirements for fixed steel ladders and platforms Part 3: Industrial protective railings and steel platforms
GB 7231 Basic identification colors, identification symbols and safety signs of industrial pipelines
GB/T 11835 Rock wool, slag wool and their products for thermal insulation
GB 12348 Noise standard at the boundary of industrial enterprises
GB/T 13275 Technical requirements for general purpose centrifugal fans
GB/T 13347 Petroleum Gas Pipeline Flame Arrestor
GB/T 13869 Electricity Safety Guide
GB 15930 Fire valves for building ventilation and smoke exhaust systems
GB/T 16157 Determination of particulate matter in exhaust from stationary sources and sampling method for gaseous pollutants
GB/T 19686 Rock wool and slag wool thermal insulation products for construction
GB/T 19839 General technical requirements for industrial fuel gas burners
GB 50016 Code for fire protection of building design
GB 50019 Design Code for Heating, Ventilation and Air

Conditioning GB 50029 Code for Design of Compressed Air Station GB 50051 Exhaust cylinder design code GB 50057 Code for lightning protection design of buildings GB 50058 Code for design of electrical installations in explosive and fire hazardous environments GB/T 50087 Industrial Enterprise Noise Control Design Code GB 50140 Code for design of building fire extinguisher configuration GB 50160 Code for fire protection design of petrochemical enterprises GB 50187 General Layout Design Specification for Industrial Enterprises HJ/T 1 Fixed position device for gas parameter measurement and sampling HJ/T 38 Determination of non-methane total hydrocarbons in exhaust gas from stationary sources. Gas chromatography HJ/T 397 Fixed source exhaust gas monitoring technical specification HJ 732 Air bag method for sampling volatile organic compounds in exhaust gas from stationary sources HJ 734 Determination of Volatile Organic Compounds in Exhaust Gases from Stationary Pollution Sources Solid Phase Adsorption-Thermal Desorption/Gas Chromatography-Mass Spectrometry HJ.2000 Technical Guidelines for Air Pollution Control Engineering AQ 3009 Electrical explosion-proof safety code for hazardous locations GBZ 1 Hygienic Standard for Design of Industrial Enterprises GBZ 2.1 Occupational Exposure Limits for Hazardous Factors in the Workplace Part 1: Chemical Hazardous Factors GBZ 2.2 Occupational Exposure Limits for Hazardous Factors in the Workplace Part 2: Physical Factors HGJ 229 Code for construction and acceptance of industrial equipment and pipeline anti-corrosion engineering HG/T 20642 chemical industrial furnace refractory ceramic fiber lining design technical regulations JC/T 2135 Honeycomb ceramic heat storage body SGBZ -0805 Air duct and component insulation construction technology standard SH/T 3038 Technical specification for power design of production equipment in petrochemical enterprises "Regulations on Environmental Protection Management of Construction Projects" (revised on July 16, 2017) "Interim Measures for the Acceptance of Environmental Protection of Construction Projects" (Guohuanguai Environmental Assessment [2017] No. 4)

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Volatile organic compounds (VOCs)

Organic compounds that participate in atmospheric photochemical reactions, or organic compounds determined in accordance with relevant regulations.

When characterizing the overall emission of VOCs, according to industry characteristics and environmental management requirements, total volatile organic compounds (in TVOC table Show), non-methane total hydrocarbons (indicated by NMHC) as pollutant control items.

3.2 Industrial organic waste gas

Refers to waste gas containing volatile organic compounds discharged from industrial production processes.

3.3 Regenerative thermal oxidizer (RTO)

Refers to the combustion and purification treatment of industrial organic waste gas, and the use of heat accumulators to heat and raise the waste gas to be treated, and to exchange the purified exhaust gas Thermal cooling device. The regenerative combustion device is usually composed of reversing equipment, regenerator, combustion chamber and control system.

3.4 Heat transfer media

Refers to the functional material that realizes heat storage and exchange during the operation of the heat storage combustion device.

3.5 Divert device

Refers to a valve or rotary gas distributor that changes the flow of exhaust gas to be treated and purified exhaust gas.

3.6 Interval time

Refers to the time interval between changes in gas flow direction.

3.7 Purification efficiency

Refers to the ratio of the mass flow of VOCs processed by the regenerative combustion device to the mass flow of VOCs entering the regenerative combustion device, expressed as a percentage.

3.8 Thermal energy recovery

Refers to the ratio of the actual heat used by the preheated exhaust gas in the regenerative combustion device to the maximum available heat, expressed as a percentage.

3.9 Self-sustaining combustion

Refers to the combustion process that only relies on the heat released by the combustion of combustibles in the exhaust gas to maintain the normal operation of the RTO at the set temperature.