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

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**Standard for design of electronic industry emissions treatment
engineering**

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Table of Contents

- 1 General
- 2 terms
- 3 Basic Regulations
- 4 The structure and connection method of the exhaust pipe shall take anti-liquid leakage measures.
 - 4.1 General provisions
 - 4.2 Pollutant Control
 - 4.3 Emergency facilities
- 5 alkaline waste gas system
 - 5.1 General provisions
 - 5.2 Processing flow and method
 - 5.3 Handling equipment

1 General

1.0.1 In order to implement the relevant national laws, regulations and regulations in the design of waste gas treatment projects in the electronic industry, standardize the design content and depth of the project, improve the design level of the project, and achieve environmental protection, energy and resource conservation, advanced technology and economical This standard is formulated to meet the requirements of reasonableness and guarantee of design quality and safety.

1.0.2 This standard is applicable to the design of new construction, reconstruction and expansion of electronic industry waste gas treatment projects.

1.0.3 In addition to complying with this standard, the engineering design of waste gas treatment in the electronic industry shall also comply with the current relevant national standards.

2.0.1 Closed box enclosure

A solid structure used to separate a space with ventilation facilities from other spaces with or without ventilation facilities.

2.0.2 Exhausting static pressure of equipment

The pressure difference between the inside and outside of the closed box of the equipment that needs to be exhausted, that is, the difference between the pressure inside the closed

box of the equipment and the pressure of the environment where the equipment is located, usually a negative value, and the unit is Pa.

2.0.3 incompatible

The unintentional combination of chemical substances may produce violent reactions or uncontrollable conditions, and the energy released may cause danger.

2.0.4 local exhaust

The working principle of local exhaust is to capture pollutants at or near the pollution source and discharge them to the external environment, usually through a treatment device that purifies the air or destroys the pollution factors.

2.0.5 acid contaminated exhaust

The general term for acidic pollutant gases produced during fuel combustion and production processes in the factory area of an enterprise. They usually dissolve in water and react to form weak acids, including sulfur dioxide, hydrogen sulfide, fluoride, chlorine, hydrogen chloride, phosphoric acid, nitric acid, sulfuric acid, etc.

2.0.6 Alkaline contaminated exhaust

The general term for alkaline pollutant gases generated during the production process, which can usually react with acids to form salt compounds, including ammonia, amine compounds, and sodium hydroxide.

2.0.7 special contaminated exhaust

Waste gas containing toxic, corrosive, oxidizing, spontaneously ignitable, flammable, inert and other substances emitted by chemical vapor deposition, diffusion, epitaxy, ion implantation, dry etching and other process equipment in the production process of electronic products.

2.0.8 Perfluorocompounds (PFCs)

Fluorine compounds with high global warming potential (GWP) used in chemical vapor deposition, dry etching and other processes in the production process of the electronics industry, including perfluorinated compounds and hydrofluorocarbons (HFCs), such as carbon tetrafluoride (CF₄), hexafluoroethane (C₂F₆), octafluoropropane (C₃F₈), octafluorocyclobutane (c-C₄F₈), nitrogen trifluoride (NF₃), sulfur hexafluoride (SF₆) and trifluoromethane (CHF₃). The above-mentioned perfluorinated compounds and hydrofluorocarbons are collectively referred to as perfluorinated compounds in the industry.

2.0.9 Immediately dangerous to life and health (IDLH)

The environmental concentration that is immediately harmful to life and causes irreversible adverse effects on health, or the environmental concentration that reduces the ability of people to escape.

2.0.10 restricted-flow orifice

It is a device placed in the valve body of the gas cylinder to limit the maximum flow rate within a certain range.

2.0.11 Volatile organic compounds (VOCs)

All organic compounds with a boiling point between 50°C and 250°C and a vapor pressure greater than or equal to 0.01kPa at a temperature of 293.15K, or that can be emitted into the air in the form of gaseous molecules, excluding methane.

2.0.12 point-of-use abatement (POU) of tail gas treatment equipment

The equipment that is installed near the process production equipment and treats the exhaust gas is usually called exhaust pretreatment equipment or on-site exhaust gas treatment equipment.

2.0.13 Centralized abatement system

It is usually located at the end of the exhaust gas system, and the specific pollution factors contained in the exhaust gas are finally reduced before being discharged into the atmosphere, and the treatment system reaches the specified emission concentration or standard.

2.0.14 Rotor-concentrator system

After the volatile organic waste gas passes through the adsorption area of the rotor, its pollution factors can be effectively adsorbed in the adsorption material of the rotor, and desorbed by the high-temperature air with a small flow rate in the desorption area of the rotor, so that low concentration and large air volume A system that concentrates volatile organic waste gas into high-concentration, low-volume volatile organic waste gas.

2.0.15 regenerative thermal oxidizing system

The heat storage bed absorbs the heat of high-temperature flue gas, and preheats the untreated low-temperature exhaust gas, and the exhaust gas after heat absorption and heat-up destroys its pollution factor structure through high-temperature cracking.

2.0.16 Packed-bed scrubber of exhaust gas treatment equipment

Waste gas treatment equipment that increases the contact area of gas-liquid waste gas through fillers, including waste gas treatment equipment such as the body, packing layer, demister layer, circulating spray system, circulating pump, liquid storage tank, and control system, is usually divided into horizontal and vertical Mode.

2.0.17 Press-in exhaust gas treatment system blow-through abatement system

The fan is located upstream of the airflow of the exhaust gas treatment equipment, and the exhaust gas treatment equipment is a positive pressure treatment system relative to the environment in which it is located.

2.0.18 drawing out abatement system

The fan is located downstream of the exhaust gas treatment equipment, and the exhaust gas treatment equipment is a negative pressure treatment system relative to the environment.

2.0.19 Blow-draw abatement system

Fans are installed at the inlet and outlet of the exhaust gas treatment equipment, and the exhaust gas treatment equipment is a treatment system with a slight negative pressure or a slight positive pressure relative to the environment.

2.0.20 Time-weighted average allowable concentration permissible concentrationtime weighted average (PC-TWA)

The average allowable exposure concentration for 8h working days and 40h working weeks specified with time as the weight.

2.0.21 Permissible concentration-short term exposure limit (PC-STEL)

Under the premise of complying with PC-TWA, the concentration allowed for short-term (15min) exposure.

2.0.22 The maximum allowable concentration maximum allowable concentration (MAC)

The concentration of harmful substances in the air of the workplace should not exceed.

3 Basic Regulations

3.0.1 The process and production equipment that produces harmful substances should be automated, and measures should be taken for sealing, isolation and negative pressure