

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 2306-2018

**Guideline on available techniques of pollution prevention and
control for coking chemical industry**
(English Translation)

Issued on: December 29, 2018

Implemented on: March 1, 2019

Issued by: Ministry of Ecology and Environment

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Foreword

To implement the "Environmental Protection Law of the People's Republic of China", "Water Pollution Control Law of the People's Republic of China" the Law on Prevention and Control, etc., to prevent and control environmental pollution, improve environmental quality, and promote technological progress in pollution prevention and control of the coking chemical industry, and develop this standard.

This standard proposes a feasible technology for the control of waste gas, wastewater, solid waste and noise pollution in the coking chemical industry.

Appendix A of this standard is an informative annex.

This standard is the first release.

This standard is organized by the Department of Science and Technology and the Department of Regulations and Standards.

This standard was drafted. Environmental Engineering Evaluation Center of the Ministry of Environmental Protection, China Metallurgical Engineering Co., Ltd., China Metallurgical Construction Research Institute Co., Ltd., Institute of Process Engineering, Chinese Academy of Sciences, Hebei Zhonglian Energy Environmental Protection Technology Co., Ltd., Shanxi Jinhuan Keyuan Environmental Resources Division Technology Co., Ltd., China Coking Industry Association.

This standard was approved by the Ministry of Ecology and Environment on December 29, 2018.

This standard has been implemented since March 01, 2019.

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

1 Coking chemical industry pollution prevention and control feasible technical guide

1 Scope of application this standard proposes feasible technologies for the prevention and control of waste gas, wastewater, solid waste and noise pollution in coking chemical industry enterprises and advanced pollution prevention and control.

Line technology.

This standard can be used as environmental impact assessment for construction projects of coking chemical industrial enterprises, revision and revision of national pollutant discharge standards, and discharge permit management.

References for the selection of rational and pollution prevention technologies.

2 Normative references

This standard refers to the following documents or their terms. For undated references, the valid version applies to this standard.

GB 5085 Hazardous Waste Identification Standard GB 16171-2012 Coking chemical industry pollutant discharge standards GB 18597 Hazardous Waste Storage Pollution Control Standard GB 18599 General industrial solid waste storage and disposal site pollution control standards GB 34330 General rules for the identification of solid waste National Directory of Hazardous Wastes (Order No. 39 of the Ministry of Environmental Protection)

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Coking chemical industry coking chemical industry

The coking coal is mixed according to the production process and product requirements, and then placed in a closed coke oven insulated from air, and subjected to high, medium and low temperature dry distillation.

It is a general term for the production process of coke, coke oven gas and chemical products. The types of coke ovens in the coking chemical industry include conventional coke ovens, heat recovery coke ovens, Three kinds of semi-coke (blue carbon) carbonization furnace.

3.2 Feasible techniques of pollution prevention and control

According to the environmental demand and economic level in a certain period of China, pollution prevention technology and pollution control technology are comprehensively adopted in the pollution prevention and control process.

Surgery and environmental management measures to make pollutant emissions stable to meet the national coking chemical industry pollutant discharge standards, scale application technology.

3.3 Advanced available techniques for pollution prevention and control

At least one major pollutant emission in the feasible technology for pollution prevention and control is stable lower than the national pollutant discharge chemical industry standard 70% worth of technology.

23.4 Conventional machine coke oven machine-coke oven

The carbonization chamber and the combustion chamber are separated, and the coking coal is insulated and indirectly heated to be coke, and is provided with gas purification and chemical product recovery.

Production equipment. The coal charging method is divided into top loading and tamping side loading.

3.5 heat recovery coke oven thermal-recovery stamping mechanical coke oven Coke oven carbonization chamber micro-negative pressure operation, mechanized tamping, coal charging, coking, recycling and coke combustion exhaust gas waste heat in one coke the production unit is divided into a horizontal furnace and a vertical furnace to produce casting coke.

3.6 Semi-coke (blue carbon) carbonization furnace semi-coke oven Using non-stick coal, weakly-viscous coal, long-flame coal, etc. as raw materials, low-temperature dry distillation at a carbonization temperature of 750 ° C or lower to produce semi-coke (blue charcoal) Main production equipment. The heating method is divided into internal heat type and external heat type.

4 Industry production and generation of pollutants

4.1 Conventional machine coke oven

4.1.1 Production process Coking coal is produced by high-temperature dry distillation to produce coke, and by-product coke oven gas is purified to recover tar, crude benzene, ammonium sulfate and other chemical products, usually Including coal preparation, coking, quenching, coke treatment, gas purification and other production units. Among them, the coal preparation unit includes clean coal storage, broken (powder), in the transportation

and other links, the coking unit includes coal charging, push coke, and coke oven heating. The quenching unit includes dry quenching or wet quenching, and the coke the processing unit includes coke granules, sieving, transfer, storage, etc. The gas purification unit includes cold drum, desulfurization, deamination, and debenzene removal.

And tar storage tanks, benzene storage tanks and other facilities.

4.1.2 Generation of exhaust pollutants Exhaust gas is mainly produced in various production units. Among them, the coal preparation and coke processing units mainly produce particulate matter; the coke oven heating process mainly produces particles.

Granules, sulfur dioxide (SO₂), nitrogen oxides (NO_x), NO_x production concentration is generally 300 ~ 1500 mg/m³; coal loading, push coke, dry method Quenching and other aspects mainly produce particulate matter; the cold drum and tar storage tanks mainly produce benzo[a]pyrene, hydrogen cyanide, phenols, non-methane total hydrocarbons, Ammonia, hydrogen sulfide, etc., benzene storage tank mainly produces benzene, non-methane total hydrocarbons, etc.; desulfurization regeneration facilities mainly produce ammonia, hydrogen sulfide; ammonium sulfate drying facilities it mainly produces particulate matter and ammonia.

4.1.3 Production of wastewater contaminants the waste water is mainly produced in the gas purification unit, including residual ammonia water, crude benzene separation water, gas water seal water, final cold discharge sewage, etc.

The dyeing factors are suspended solids (SS), chemical oxygen demand (CODCr), ammonia nitrogen, five-day biochemical oxygen demand (BOD₅), total nitrogen, total phosphorus, and stone.

Oils, volatile phenols, sulfides, cyanides, etc.

4.1.4 Production of solid waste Solid waste is mainly produced in various production units. Among them, the coal preparation, coking, quenching and coke processing units mainly produce dust ash and waste minerals.

3 oil and mineral oil-containing waste, waste activated carbon, etc.; gas purification unit cold drum link mainly produces tar residue, desulfurization link (wet oxidation method) main in order to produce desulfurization waste liquid, the ammonium sulfate facility mainly produces acid tar, the ammonia distillation facility mainly produces evaporated ammonia residue, and the debenzene removal process mainly produces washing oil regeneration.

Slag, wastewater treatment mainly produces sludge and the like.

4.1.5 Noise generation the noise is mainly generated in various production units, including pulverizers, vibrating screens, dust removal fans, blowers, CDQ circulating fans, steam turbines, Generators, CDQ waste heat boilers and pumps.

4.2 Heat recovery coke oven