

HJ

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**Guideline on available technologies of pollution prevention and
control for sugar industry**

制糖工业污染防治可行技术指南

(English Translation)

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Foreword

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

This standard proposes a feasible technology for the prevention and treatment of wastewater, waste gas, solid waste and noise pollution in sugar industry.

Appendix A of this standard is an informative annex.

This standard is the first release.

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

This standard was drafted. China Academy of Environmental Sciences, Guangxi Zhuang Autonomous Region Environmental Protection Science Research Institute, China Light Industry Cleanup Production Center, COFCO Tunhe Sugar Industry Co., Ltd.

This standard is 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 Technical guide for feasible pollution control in sugar industry

1 Scope of application this standard proposes a feasible technology for the prevention and control of waste gas, wastewater, solid waste and noise pollution in sugar industry enterprises.

This standard can be used as an environmental impact assessment for sugar industry enterprises construction projects, national pollutant discharge standards revision, sewage permit management and Reference for the selection of pollution prevention technologies.

2 Normative references

The contents of this standard refer to the following documents or their terms.

GB 21909-2008 Water pollutant discharge standard for sugar industry

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Cane sugar cane sugar

The process of removing impurities and extracting finished sugar products containing high-purity sucrose by physical and chemical methods using sugar cane stems as raw materials.

3.2 Beet sugar beet sugar

The process of removing impurities and extracting finished sugar products containing high-purity sucrose by physical and chemical methods using the roots of beets as raw materials.

3.3 Feasible technologies 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 sugar industry pollutant discharge standards, scale application technology.

3.4 Pressing milling

The process of applying sugar to sugar cane or sugar cane by a press to extract the cane juice.

3.5 Exudation diffusion

A process in which sugar cane (or intermediate bagasse) or sucrose in beet silk is presented by water by dipping and dialysis.

23.6 Extracting the juice

The process of extracting sugar juice from a sugar material by pressing or exuding.

3.7 Clean purification the process of removing non-sucrose substances from the juice.

4 Industry production and generation of pollutants

4.1 Sugarcane sugar production and pollutant production

4.1.1 Sugarcane sugar production process. After the sugarcane is crushed and pretreated, the cane juice is extracted, and the non-sucrose substance is removed by the purification process and evaporated.

Concentrated to a certain concentration of syrup, the syrup is further concentrated to precipitate sucrose crystals, and the crystals are adjusted by adjusting the appropriate temperature and supersaturation.

Gradually increase to the required particle size, and finally use a centrifuge to separate the mother liquor from the crystal to obtain crystal sugar, then dry, sieve, finished sugar package Loading factory.

4.1.2 Waste water is mainly produced by processes such as purification, evaporation and crystallization of sugar, including washing water, washing cloth, etc. The main pollutants are chemical needs.

Oxygen demand (CODCr), five-day biochemical oxygen demand (BOD5), suspended solids (SS), ammonia nitrogen, total nitrogen and total phosphorus, after treatment at the sewage treatment station emission.

4.1.3 The cooling water of the press bearing produced by the juice extraction process is directly recycled after cooling and cooling; it is produced by the evaporation and boiling sugar crystallization process.

The condensed water is directly recycled after cooling and cooling, or recycled for other processes.

4.1.4 Exhaust gas is mainly produced by processes such as cleaning, lime loading and unloading, and feeding, including loading and unloading of exhaust gas, operating exhaust gas, lime gas, and machine waste.

Gas, the main pollutant is particulate matter. Odors produced by sludge fermentation, bagasse fermentation, and sewage treatment stations are generally unorganized.

4.1.5 Solid waste is produced by the process of extracting juice, purifying and separating honey, including bagasse produced by the juice extraction process, filter sludge produced by the purification process, and honey separation.

Molasses produced in the process, sludge generated from wastewater treatment, and the like.

4.1.6 Noise mainly comes from the operation of blowers, air compressors, pumps, steam turbine generator sets and other equipment.

4.2 Sugar beet production and pollutant production

4.2.1 Process of production of sugar beet. The beet is transported from the beet pulp to the workshop, and after being pretreated by removing impurities, washing, etc., the shreds are sent to the exudation device.

The oozing juice is cleaned to remove non-sugar substances, and the purified sugar juice is decolorized by sulfur bleaching, and then sent to a multi-effect evaporator to be concentrated into syrup, and the syrup is passed through Boiled sugar, crystallized, honeydew, dried, sieved, finished sugar packaging factory.

4.2.2 Waste water is mainly produced by processes such as cleaning, evaporation and crystallization of sugar, mainly including washing water, washing cloth and so on. The main pollutant is CODCr, BOD5, SS, ammonia nitrogen, total nitrogen and total phosphorus are discharged after treatment at the sewage treatment station.

4.2.3 Washing water, flowing water and compressed water produced by the flow, washing and leaching processes are directly recycled after being treated;

The condensed water produced in the crystallization process is directly recycled after being cooled and cooled, or recycled for other processes.

4.2.4 Exhaust gas is mainly produced by processes such as cleaning, lime loading and unloading, and feeding, including loading and unloading exhaust gas, operating exhaust gas, lime elimination machine and machine waste.

Gas, the main pollutant is particulate matter. The odor generated by the sludge fermentation and sewage treatment stations is usually unorganized.

4.2.5 Solid waste is produced by processes such as exudation, purification, and honey separation, including beet pulp produced in the exudation process and filter sludge produced by the cleaning process.

3 points of molasses produced by the honey process, and sludge produced by wastewater treatment.

4.2.6 Noise mainly comes from the operation of blowers, air compressors, pumps, steam turbine generator sets and other equipment.