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

GB 32044-2015

The norm of energy consumption per unit product of sugar

糖单位产品能源消耗限额

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Foreword

4.2 of this standard is mandatory, the rest are recommended. This standard was drafted in accordance with rules GB/T 1.1-2009 given. This standard savings by the National Development and Reform Commission Resources and Environmental Protection Division, Ministry of Industry and Information Technology Energy Saving and Comprehensive Utilization Department proposed. This standard by the National Energy Foundation and Management Standardization Technical Committee (SAC/TC20). This standard was drafted. Guangzhou Sugarcane Industry Research Institute (National Sugar Industry Quality Supervision and Inspection Center), China Sugar Association, Guangzhou Overseas Chinese Sugar, Yangpu Nanhua Sugar Group Co., Ltd. Guangxi, Yunnan Mao British Sugar (Group) Co., Ltd., Guangxi Sugar Feng Biochemical Company Limited Secretary, Yingkou North Sugar Co., Botian Sugar Co., Guangxi State Farms Sugar Group Co., Ltd., Yunnan Yuanjiang Jin Ke set Sugar Group Co., Ltd., Guangxi Lu house Eurasia Sugar Co., Guangxi Sugar expensive (Group) Co., Ltd., Guangdong Hanford Sugar Group Ltd., Nanning Sugar Industry Co., Ltd., Guangxi Sugar Yong Xinhua Group Co., Ltd., COFCO Tuen River Sugar Co. Chongzuo, Guangxi Nanning East Asia Sugar Group, Rizhao Lingyun Hai Sugar Group Co., Ltd., Dongguan City, East Sugar Group Co., Ltd., Guangxi University, South China University of Technology, Dongguan Institute of Technology. The main drafters of this standard. Li Haiqiao, Yu Juan, Yan Weimin, Xiao Ling, Li Jinsheng, Jiao Nianmin, Li Lin, Li Kai, Liang Yi, Ho Hua-chu, Deng Yi, Wangxiu Ming, Li Zheng, Jian Bo, Zhou Yusheng, chapter Kexiang, Huang Xiangyang, Huang Xingjiang, Zhao Chenghai, Huang Xueying, Yu Bin structure, has a history Jun, Chen Jin, Ma Ying, Guo Jianxiong. Sugar consumption per unit product energy

1 Scope

GB 32044-2015 is the Chinese national standard on the norm of energy consumption per unit product of sugar, in the field of energy and heat transfer engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a

practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 11 September 2015 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 October 2016. Classification: ICS 27.010, CCS F01. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the technical requirements of the sugar unit product energy consumption limits, the range of statistical and computational methods, energy conservation and management measures. This standard applies to cane sugar, beet sugar, calculated manufacturers sugar refining energy consumption, and energy assessment of new or expansion means Consumption control.

2 Normative references

The following documents for the application of this document is essential. For dated references, only applies to the version dated paper Pieces. For undated references, the latest edition (including any amendments) applies to this document. GB 317 white sugar GB 1445 soft white sugar

GB/T 2589 comprehensive energy consumption computing General

GB/T 9289 sugar industry term

GB/T 12723 energy consumption per unit product preparation General

GB 17167 energy use per unit of energy measurement apparatus equipped and General Management

GB/T 23331 Energy Management System Requirements

3 Terms and Definitions

GB/T 12723 defines the following terms and definitions apply to this document.

3.1 Sugar comprehensive energy consumption comprehensiveenergyconsumptionofsugar In the report period, the total sugar production of a variety of energy consumed.

3.2 Sugar comprehensive energy consumption per unit of product comprehensiveenergyconsumptionperunitproductofsugar Sugar comprehensive energy consumption per unit product representation. 4. Technical Requirements

4.1 existing sugar production business unit product energy consumption limits Existing sugar production business unit product energy consumption limits shall conform to the requirements of Table 1. Table 1 conventional sugar manufacturers limit energy

consumption per unit of product project Sugar consumption per unit of product kgce/t Cane sugar ≤ 550 Beet sugar ≤ 630 Sugar refining ≤ 320

4.2 new or renovation and expansion of sugar production enterprises access to energy consumption per unit of product value New or renovation and expansion of sugar production enterprises access to energy consumption per unit of product value should be in accordance with Table 2. Table 2 new or renovation and expansion of sugar production enterprises access to energy consumption per unit of product value project Sugar consumption per unit of product kgce/t Cane sugar ≤ 320 Beet sugar ≤ 360 Sugar refining ≤ 220

4.3 sugar manufacturers of advanced energy consumption per unit of product value Sugar manufacturers of advanced energy consumption per unit of product value should be in accordance with Table 3. Table 3 sugar manufacturers of advanced energy consumption per unit of product value project Sugar consumption per unit of product kgce/t Cane sugar ≤ 225 Beet sugar ≤ 318 Sugar refining ≤ 200 Statistical methods and calculation range 5

5.1 statistical range

5.1.1 includes a variety of comprehensive energy consumption of sugar production system, auxiliary production systems and production systems affiliated primary energy consumed by the amount of secondary energy And the amount of loss, not including the construction and renovation process with energy and life energy (refer to the enterprise system dormitories, schools, culture and entertainment, healthcare, business Aspects of energy industry services, etc.). among them.

a) Production System Sugar production system including juice extraction, pure juice, juice heating and evaporation and crystallization of sucrose and sugar into equipment and facilities.

b) auxiliary production system Power production systems and services, mechanical repair, water, gas, heating, cooling, meter repair, lighting, warehouse and factory sites, and security materials Full, environmental protection and energy saving devices and facilities.

c) Affiliated Production System Production systems specially configured for the control room, office, operating room, control room, lounge, dressing room, in the control analysis, product testing, maintenance Section and other facilities.

5.1.2 energy output during sugar production means for energy output during sugar production outwardly other products or devices used. Sugar production process The generated gas, waste, waste recycling is not used, non-metered, and there is no heating value can not be measured as the energy use, shall count The output energy.

5.1.3 sugar production process to recover energy utilization for the production process when the sugar itself, shall not be included as an input energy; means for outward outputting While for the other product or device, such as a byproduct when the steam

output outwardly folded in coal can not be deducted from the input energy, and accrued The output energy.

5.1.4 sugar necessary for the production of safety, environmental protection measures energy consumption (e.g., carbon dioxide, energy recovery, waste water treatment, etc.) should be included in raw sugar Production of energy.

5.2 Calculation Method

5.2.1 various heat value of the fuel shall GB/T 2589 converted into coal. Various energy equivalent calorific value to business during the reporting period measured Heat value calculation prevail. Found no conditions found in Appendix A coal off various energy reference coefficients.

5.2.2 Qualified sugar products should meet the quality requirements of GB 1445 317 or GB and off like this standard reporting period should yield a white sugar According to GB/T 9289 for conversion.

5.2.3 sugar overall energy consumption by the formula (1). $E = \sum_{i=1}^n (E_i \times k_i) - \sum_{j=1}^m (E_j \times k_j)$ (1) Where. E

--- sugar comprehensive energy consumption in kg coal (kgce); The i-th energy E_i

--- physical quantity entered during sugar production, in kilograms (kg) or kilowatt (kW · h); The i-th standard coal coefficient k_i

--- energy input, kWh per unit kgce [kgce/(kW · h)] or standard kg Per kg of coal (kgce/kg) or kilograms per cubic meter of coal (kgce/m³);

--- n-number of types of energy input;

--- m number of kinds of energy output; J th physical quantity E_j

--- energy during sugar production output, in kilograms (kg) or kilowatt (kW · h); J th coefficient of standard coal energy k_j

--- input, in units of kWh per kgce [kgce/(kW · h)] or standard kg Per kg of coal (kgce/kg) or kilograms per cubic meter of coal (kgce/m³).

5.2.4 sugar unit energy consumption according to formula (2). $e = \frac{E}{M}$ (2) Where. E

--- sugar unit energy consumption, in kilograms per tonne of coal (kgce/t); Sugar E

--- During the reporting period the overall energy consumption in kilograms of standard coal (kgce);

--- M reporting period off like a sugar production, tonnes (t).

Appendix A