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

GB 29438-2012

**The norm of energy consumption per unit product of
polyoxymethylene**

聚甲醛单位产品能源消耗限额

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 5.2 Calculation Method
- Appendix A
- Appendix B

Foreword

4.2 of this standard are 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) and China Petroleum and Chemical Industry Federation Centralized. Drafted by: China National Bluestar (Group) Co., Ltd. Shanghai Bluestar POM, the State Quality Supervision synthetic resin Governor Inspection Center. The main drafters. Zhang Yi, Wang Jiandong, Shi Xun Ping, Wei Zhi An, Liu Jie, Cai Liang Zhen, Zhou Jianjun. POM energy consumption per unit product

1 Scope

GB 29438-2012 is the Chinese national standard on the norm of energy consumption per unit product of polyoxymethylene, 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 31 December 2012 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 2013. 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 POM unit product energy consumption (referred to as "energy") technical requirements limit, the scope of statistics and calculation methods, as well as Energy management measures. This standard applies to the calculation methanol and

ethylene glycol as the main raw material of POM energy producers, assessment, and new projects of Energy 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/T 12497 three-phase asynchronous motor economy

GB/T 13462 power transformer economic operation

GB/T 13466 AC driven fan (pump, air compressor) General economic operation system

GB/T 14549 utility grid power quality Harmonics

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

GB 18613 sized three-phase asynchronous motor energy efficiency limit value and energy efficiency rating

GB 19153 displacement air compressor energy efficiency and energy efficiency level limit value

GB 19761 fan efficiency limit value and energy efficiency rating

GB 19762 water pump energy efficiency limit value and energy evaluation

GB 20052-phase distribution transformer energy efficiency limit value and energy evaluation

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 POM comprehensive energy consumption

comprehensiveenergyconsumptionofpolyoxymethyleneproduct During the reporting period, the total energy consumption of POM products throughout the production process.

3.2 POM unit product energy consumption

comprehensiveenergyconsumptionperunitproductofpolyoxymethylene POM production per unit amount represented the energy consumption.

4. Technical Requirements

4.1 POM limit energy consumption per unit of product Company prior polyoxymethylene POM energy consumption per unit of product should not exceed the limit value 2800kgce/t.

4.2 POM unit product energy access value New or expansion means producing polyoxymethylene POM access unit energy value is not greater than 2100kgce/t.

4.3 POM advanced energy consumption per unit of product value POM encouraged by manufacturers of energy-saving technological transformation, technological progress, energy management measures to achieve the advanced POM unit energy consumption value Claim. POM advanced unit energy consumption value is not greater than 2000kgce/t.

5 range and statistical calculation method

5.1 statistical range

5.1.1 POM overall energy consumption statistics ranging from industrial alcohol, ethylene glycol and other raw materials and steam, water and other materials and industrial power Start metered into the polyoxymethylene means, the amount of primary energy to the finished product storage bag until the actually consumed, the amount of secondary energy, and work energy Mass (such as water, oxygen, nitrogen, compressed air, etc.). Recycled

5.1.2 polyoxymethylene means waste heat of chemical reaction heat and the like, the amount of energy should not be included. If the heat and energy and Chemical reaction heat, etc. for use in other devices, which should be deducted from the actual utilization of the energy consumption of the present system.

5.1.3 various heat value of the fuel to be equivalent to a uniform unit of measurement kg coal (kgce) or tce (tce). All kinds of heat energy Calorific value of enterprise value measured during the reporting period shall prevail. Found no conditions, can refer to Appendix A and Appendix B of various energy given off Reference coefficients of coal, various types of coal off energy working medium energy reference coefficients.

5.1.4 Energy consumption statistics, accounting should include the various production processes and systems.

5.2 Calculation Method

5.2.1 POM comprehensive energy consumption is calculated POM POM overall energy consumption is equal to the production process of various energy input by subtracting various energy output externally, according to the formula (1) Calculation. $E = \sum_{i=1}^n (E_i \times k_i) - \sum_{j=1}^m (E_j \times k_j)$ (1) Where. E

--- polyoxymethylene energy consumption in kg coal (kgce); The amount of the i-th physical energy E_i

--- paraformaldehyde input during production, tonnes (t) or kilograms (kg), kilowatt (kW · h), Cubic meters (M3); K_i

--- i-th coefficient of coal off the energy input, in kilograms per tonne of coal (kgce/t) of coal per kilogram or kilograms (Kgce/kg), per kilowatt kgce [kgce/(kW · h)], kgce per cubic meter (kgce/m3);

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

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

--- paraformaldehyde production process output, tonnes (t) or kilograms (kg), kilowatt (kW · h), Cubic meters (M3); J th coefficient of coal off energy kJ

--- output in kilograms per tonne of coal (kgce/t) of coal per kilogram or kilograms (Kgce/kg), per kilowatt kgce [kgce/(kW · h)], kgce per cubic meter (kgce/m3).

5.2.2 POM unit energy consumption is calculated Unit energy consumption is equal to the report period divided by the report period polyoxymethylene POM yield, calculated according to formula (2). $e = EP / (2)$ Where. E

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

--- polyoxymethylene energy reporting period, in kg coal (kgce); Poly P

--- reporting period formaldehyde production, tonnes (t).

6 and energy management measures

6.1 basic management and energy saving measures Enterprise should review the energy consumption, energy consumption per unit products for assessment, and the assessment indicators break down into the grassroots departments and units, The establishment of energy accountability. Energy companies should be equipped with measuring instruments according to GB 17167 and the establishment of energy measurement management systems.

Appendix A

(Informative) All types of standard coal energy conversion coefficient of reference
Reference A.1 all kinds of energy conversion coefficient of standard coal in Table A.1. Table A.1 all kinds of standard coal energy conversion coefficient of reference Energy names coefficient average calorific value of coal Coal 20908kJ/kg (5000kcal/kg) 0.7143kgce/kg Coal washing 26344kJ/kg (6300kcal/kg) 0.9000kgce/kg other coal washing Coal washing 8363kJ/kg (2000kcal/kg) 0.2857kgce/kg Slime 8363kJ/kg ~ 12545kJ/kg (2000kcal/kg ~ 3000kcal/kg) 0.2857kgce/kg ~ 0.4286kgce/kg Coke 28435kJ/kg (6800kcal/kg) 0.9714kgce/kg Crude 41816kJ/kg (10000kcal/kg) 1.4286kgce/kg Fuel 41816kJ/kg (10000kcal/kg) 1.4286kgce/kg Gasoline 43070kJ/kg (10300kcal/kg) 1.4714kgce/kg Kerosene 43070kJ/kg (10300kcal/kg) 1.4714kgce/kg Diesel 42652kJ/kg (10200kcal/kg) 1.4571kgce/kg Coal tar 33453kJ/kg (8000kcal/kg) 1.1429kgce/kg Residue 41816kJ/kg (10000kcal/kg) 1.4286kgce/kg LPG 50179kJ/kg (12000kcal/kg) 1.7143kgce/kg Refinery gas 46055kJ/kg (11000kcal/kg) 1.5714kgce/kg Gas oil 38931kJ/m3 (9310kcal/m3) 1.3300kgce/m

Appendix B