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

**GB/T 32151.19-2024**

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**Greenhouse gas emission accounting and reporting  
requirements - Part 19: Heat treatment enterprises**

温室气体排放核算与报告要求 第19部分：热处理企业

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## Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting is required. This document is part 19 of GB/T 32151 Greenhouse gas emissions accounting and reporting requirements. GB/T 32151 has been published The following parts. --Part

## 1 Scope

China's national requirements for greenhouse gas emission accounting and reporting by heat treatment enterprises. It is Part 19 of GB/T 32151 and specifies the accounting boundary, the calculation steps and methods, the data quality management, and the content and format of the report, with informative annexes giving a report format template

and recommended values for the relevant parameters. Heat treatment is the operation that gives a steel part its properties: the part is heated, held, and cooled at a controlled rate, and what comes out is harder, tougher or more machinable than what went in. It is also among the most energy-intensive operations in metalworking per tonne of product, because the whole part must be brought to temperature and held there, often for hours, and often in a protective atmosphere that has itself to be generated. That gives a heat treatment plant an emissions profile unlike a forging plant's, even though both are furnace operations. Most heat treatment furnaces are electrically heated, so the emissions are dominated by purchased electricity rather than by fuel burnt on site - which makes the reported figure depend heavily on the grid emission factor. And the protective atmospheres are a genuine process emission rather than a combustion one: endothermic gas generated from natural gas, and methanol cracked in the furnace, both produce carbon monoxide and carbon dioxide that leave through the flare or the vent regardless of how the furnace is heated. Accounting for those correctly is what distinguishes this part from a generic industrial calculation. Issued on 29 September 2024 and in force since 1 April 2025.

This document specifies the accounting boundaries, accounting steps and methods, data quality management, and reporting of greenhouse gas emissions of heat treatment enterprises. Content and format. This document applies to the accounting and reporting of greenhouse gas emissions from heat treatment enterprises.

## 2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 384 Determination of calorific value of petroleum products

GB/T 7232 Terminology for Heat Treatment of Metals

GB/T 8121 Terminology of heat treatment process materials

GB/T 13324 Terminology of heat treatment equipment

GB 17167 General rules for the allocation and management of energy metering instruments in energy-consuming units

GB/T 22723 Determination of energy of natural gas

GB/T 32150 General principles for accounting and reporting of greenhouse gas emissions from industrial enterprises

### 3 Terms and definitions

The terms and definitions defined in GB/T 7232, GB/T 8121, GB/T 13324, GB/T 32150 and the following apply to this document.

**3.1 Greenhouse gas** The natural and human-caused atmospheric gases that absorb and emit radiation from the Earth's surface, atmosphere, and clouds. The gaseous component of radiation with wavelengths in the infrared spectrum.

**Note.** The greenhouse gases referred to in this document include only carbon dioxide (CO<sub>2</sub>). [Source: GB/T 32150-2015, 3.1, modified]

**3.2 reporting entity** A legal entity that emits greenhouse gases or an independent accounting unit that is deemed to be a legal entity. [Source: GB/T 32150-2015, 3.2]

**3.3 Heat treatment enterprise** An independent accounting unit whose main business is heat treatment processing.

### 18 Forging enterprises; --Part

**19. Heat treatment enterprises.** Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the National Technical Committee for Standardization of Heat Treatment (SAC/TC 75). This document was prepared by the National Technical Committee on Heat Treatment Standardization (SAC/TC 75) and the National Technical Committee on Carbon Emission Management Standardization (SAC/TC 548) jointly managed. This document was drafted by: Guangdong Shichuang Metal Technology Co., Ltd., China Machinery Engineering Institute Group Beijing Electromechanical Research Institute Co., Ltd., Jiangsu Fengdong Thermal Technology Co., Ltd., AVIC Great Wall Measurement and Testing (Tianjin) Co., Ltd., Erzong (Deyang) Heavy Equipment Co., Ltd., Zhejiang Shuang Ring Transmission Machinery Co., Ltd., Jiangsu Golden Industrial Furnace Co., Ltd., Zhongte Tailai Mould Technology Co., Ltd., Hefeis Heat Treatment Jiangsu System Co., Ltd., Zhejiang Juyue Gear Co., Ltd., Zhejiang Shangding Industrial Furnace Co., Ltd., Shanghai Osa Evaluation Consulting Co., Ltd. Tongyu Heavy Industry Co., Ltd., Shandong Sike Industrial Media Co., Ltd., Zhengzhou Feihong Heat Treatment Equipment Manufacturing Co., Ltd., Shandong Environmental Protection Technology Co., Ltd., China Machinery Huanyu Certification and Inspection Co., Ltd., Shenzhen Qianhai Zhongtan Comprehensive Energy Technology Co., Ltd., Jiangsu Feng Dongfang Heat Treatment and Surface Modification Engineering Technology Research Co., Ltd., Changzhou New District Hehai Heat Treatment Engineering Co., Ltd., Xi'an Fulite Heat Treatment Co., Ltd. and CRRC Qishuyan Locomotive and Rolling Stock Technology Research Institute Co., Ltd. The main drafters of this document are. Dong Xiaohong, Xu Yueming, Li Qiao, Chang Yumin, Wang Guangsheng, Han Boqun, Lü Guoyi,

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Climate change caused by human activities has been recognized as one of the greatest challenges facing the world and will continue to occur in the coming decades. Climate change will have an impact on human and natural systems and will have an impact on resource availability, economic activities and In response, relevant international organizations, countries and regions are formulating and implementing international, regional, national and local The United Nations Greenhouse Gas Emissions Management Program (GHG) is a program that aims to reduce greenhouse gas (GHG) concentrations in the Earth's atmosphere and help humanity adapt to climate change. Greenhouse gas emission management plans need to be based on the best scientific knowledge and take effective and progressive measures to address the impacts of climate change. Standards help translate this scientific knowledge into tools to address climate change. Greenhouse Gas Emissions Management Program Relies on quantification, monitoring and reporting of greenhouse gases. GB/T 32151 "Greenhouse Gas Emissions Accounting and Reporting Requirements" stipulates the greenhouse gas emissions accounting and reporting requirements from different enterprise levels. The purpose is to specify the greenhouse gas emission boundaries, measurement and testing requirements, accounting steps and verification procedures for different types of enterprises. Calculation methods, data quality management, report content and format, etc. GB/T 32151 is to be divided into the following parts. --Part