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

GB/T 42474.5-2023

**Safety monitoring system for vehicle transportation of
explosive hazardous chemicals - Part 5: Interface protocol
between vehicle devices and communication center**

爆炸危险化学品汽车运输安全监控系统 第5部分：车载装置与通信中心间数据接
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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: This document is part 5 of GB/T 42474 "Safety Monitoring System for Vehicle Transportation of Explosive Hazardous Chemicals": GB/T 42474 has The following parts were released:

- Part 1: General technical requirements;
- Part 2: Vehicle-mounted devices;
- Part 3: Vehicle-mounted device installation;
- Part 4: Monitoring client;
- Part 5: Data interface between vehicle-mounted device and communication center;
- Part 6: Data interface between communication center and monitoring client: Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents: This document is proposed and managed by the National Standardization Technical Committee on Hazardous Chemicals Management (SAC/TC251): This document was drafted by: The Third Research Institute of the Ministry of Public Security, Wuxi Internet of Things Industry Research Institute, Shanghai Institute of Chemical Industry Testing Co., Ltd., Jiangsu Yudao Data Technology Co., Ltd., China City Gas Association, Guangdong Hongda Shaohua Civil Explosion Co., Ltd., China Petroleum and Chemical Industry Federation, Shenzhen Guanghelin Technology Co., Ltd: The main drafters of this document: Liu Caixia, Wu Mingjuan, Wang Siyi, Han Zhengping, Jiao Zhihao, Liu Jinlan, Zhang Guangshou, Cao Mengran, Zhong

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In the context of promoting the implementation of the national big data strategy and accelerating the construction of a digital China, the integration of data resources and the development of open sharing will be promoted: A common direction for managing requirements and technology development: At the same time, with the rapid development of emerging technologies such as the Internet of Things and artificial intelligence, machine vision and other technologies have been initially applied in the safety management of hazardous chemical vehicle transportation: GB/T 42474 "Vehicle Transport of Explosive Hazardous Chemicals "Safety Monitoring System" selected explosive hazardous chemicals with the greatest potential safety hazards and the most serious consequences of safety accidents in the transportation of hazardous chemicals by vehicle Automobile transportation, in view of the current situation of multi-departmental collaborative management of hazardous chemical transportation in my country, closely focuses on implementing the national big data strategy, utilizing Advanced technology breaks down industry barriers, promotes the integration and open sharing of explosive hazardous chemicals transportation management data resources, and promotes the development of explosive hazardous chemicals With the goal of highly coordinated safety management, it is proposed to build a cloud computing platform as the vehicle transportation safety monitoring management system for explosive hazardous chemicals: The data resource pool, relevant industry authorities and parties involved in the transportation of explosive hazardous chemicals share technical solutions for data resources based on authority, and target The deployment of the three major explosive hazardous chemical vehicle transportation safety elements of "people", "vehicles" and "things" is based on biometrics, machine vision, emotion recognition, The on-board devices of related technologies such as active safety prevention and control of automobile driving, sensor network monitoring, etc., lead the development of the Internet of Things, cloud computing, big data, artificial intelligence, etc: The application of emerging technologies such as energy and energy in the transportation of explosive hazardous chemicals has promoted the formation of vehicles that use vehicle-mounted devices as the sensing layer of the Internet of Things to transport information: Sensing and collection, using cloud computing platform and vehicle gateway as the IoT transport layer for data communication, using cloud computing platform and B/S to monitor customers The client and mobile terminal APP are used as the application layer of the Internet of Things for data mining and intelligent collaborative management of explosive hazardous chemicals safety monitoring and early warning system, laying a technical foundation for strengthening the informatization construction of hazardous chemical transportation safety supervision and establishing a national hazardous chemical supervision information sharing platform: In order to achieve real-time tracking, comprehensive monitoring and linkage early warning of explosive hazardous chemicals transportation by vehicle, and effectively prevent serious and serious accidents in the transportation of hazardous chemicals Accidents help: GB/T 42474 "Safety Monitoring

System for Vehicle Transportation of Explosive Hazardous Chemicals" is proposed to be composed of 6 parts:

--- Part 1: General technical requirements: The purpose is to give the term definition of the safety monitoring system for the automobile transportation of explosive hazardous chemicals and system composition, clarify the technical requirements of the system functions, performance, operating environment, information security, reliability, etc.; and the corresponding tests methods and inspection rules:

--- Part 2: Vehicle-mounted devices: The purpose is to give the vehicle-mounted device group in the safety monitoring system of explosive hazardous chemicals automobile transportation: It defines the basic requirements of each component and the specific function and performance requirements of each component unit, and stipulates the power supply requirements of vehicle-mounted devices, Electrical safety requirements, electromagnetic compatibility requirements, environmental adaptability requirements and their corresponding test methods, determine the vehicle-mounted device mark and packaging, random technical documents, transportation and storage conditions:

--- Part 3: On-board device installation: The purpose is to give the vehicle-mounted device of the vehicle transportation safety monitoring system for explosive hazardous chemicals Pre-installation preparations, clarify the general installation requirements and various The specific installation requirements for the main equipment of the constituent units determine the installation acceptance method:

--- Part 4: Monitoring client: The purpose is to provide monitoring customers in the safety monitoring system for explosive hazardous chemicals automobile transportation The composition and classification of terminals, and the basic requirements of monitoring terminals, industry management terminals, enterprise operation management terminals and drivers and passengers are clarified: The specific functional requirements of the monitoring client, specifying the performance requirements, information security requirements and corresponding monitoring clients of different levels: test method:

--- Part 5: Data interface between the on-board device and the communication center: The purpose is to provide safety supervision for the transportation of explosive hazardous chemicals by vehicle The data interface for wireless data transmission and data exchange between the vehicle-mounted device and the communication center in the control system, and the structure of the data interface is clarified It specifies the classification of communication protocols and data formats:

--- Part 6: Data interface between communication center and monitoring client: The purpose is to give the monitoring of the vehicle transportation of explosive hazardous chemicals The data interface for data transmission and data exchange between the communication center and the monitoring client in the system, specifying the composition of the data interface and Its communication mode and general requirements stipulate the data interaction process

and the data format of different data interaction services: Safety Monitoring System for Vehicle Transportation of Explosive Hazardous Chemicals Part 5: Data interface between on-board device and communication center

1 Scope

GB/T 42474.5-2023 defines the link between the vehicle and the control room for road transport of explosive hazardous chemicals. A truck carrying explosives is tracked continuously - position, speed, driver behaviour, the state of the load and of the vehicle's safety equipment - because if something goes wrong, the response depends on knowing where the vehicle is and what it is carrying before anyone arrives. That tracking is only as good as the interface between the on-board device and the communication centre, and unless the interface is specified, every equipment supplier invents its own and a regional authority ends up unable to monitor vehicles from another province. This part specifies the wireless data communication interface for data exchange between the on-board device and the communication centre, including the composition of the data interface, the message structures and the communication procedures. It is Part 5 of the GB/T 42474 series, the part that makes the fleet visible. Under ICS 13.320 and CCS A91, it is written for the manufacturers of on-board monitoring terminals, for the platform operators running the communication centres, and for the transport enterprises and safety regulators who depend on the data arriving intact.

This document specifies the wireless data transmission between the vehicle-mounted device and the communication center in the vehicle transportation safety monitoring system for explosive hazardous chemicals Communication interface for data exchange, including data interface composition and communication method, general requirements, communication protocol classification and data format: This document is applicable to the application of various vehicle-mounted devices and communication centers of the safety monitoring system for automobile transportation of explosive hazardous chemicals: Other dangers The safety monitoring system for motor vehicle transportation of dangerous goods can be used as a reference:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 2260 Administrative division codes of the People's Republic of China

GB/T 19056-2021 Vehicle Driving Recorder