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Technical requirements for electrostatic safety of oil tankers

油船静电安全技术要求

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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. 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 Ministry of Transport of the People's Republic of China. Technical requirements for electrostatic safety of oil tankers

1 Scope

GB 42234-2022 is the Chinese national standard on technical requirements for electrostatic safety of oil tankers, in the field of services and company organization. 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 29 December 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2023.

Classification: ICS 03.220.40, CCS R09. 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 document specifies the general requirements for electrostatic safety of oil tankers and the electrostatic protection requirements for loading, unloading, tank washing, and ballasting of cargo oil tanks. This document applies to oil tankers in waters under the jurisdiction of the People's Republic of China.

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 18434 Safety requirements for oil tankers operating in port

3 Terms and Definitions

The following terms and definitions defined in GB 18434 apply to this document.

3.1 Standing time setting time When production is carried out in a place with static electricity hazards, the static electricity carried by the material (usually liquid) dissipates to a safe value after the equipment stops operating. Next, allow the interval time required for the next step.

3.2 relaxation time relaxation time The time required for the charge (or potential) on a charged body to dissipate to $1/e$ (about 37%) of its initial value.

4.1.1 Equipment grounding protection

4.1.1.1 The total leakage resistance between the oil tanker components and the earth is not to be greater than $1M\Omega$, and the grounding resistance is not to be greater than 100Ω .

4.1.1.2 The connecting wire should be an easy conductor such as annealed copper stranded wire, copper sheet, white steel sheet or white steel plum blossom gasket, and its cross-sectional area should not be less than $5.5mm^2$.

4.1.1.3 Insulating flanges and insulating hoses should be inspected regularly to confirm that their insulation resistance is not less than 1000Ω , and the inspection period should not exceed 1 year.

4.1.2 Operational ground protection

4.1.2.1 Insulating flanges or insulating hoses shall be used between the oil pipeline on the wharf and the oil pipeline on the tanker, and the oil pipeline on both sides shall be Grounding alone, the hull should not be grounded by means of jumper wires.

4.1.2.2 All metal components in explosion-hazardous areas, including the external protective layer, shall be reliably grounded.

4.1.2.3 During the ship-to-ship transfer operation, insulating flanges or insulating hoses

shall be used to connect the two ships, and spans shall not be used between the oil pipelines on both sides.

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