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Technical specification of safety production for gas generator initiator for air inflator

安全气囊气体发生器用点火具生产安全技术条件

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1 Scope

This standard lays down the safety technical requirements for the production, storage, transport and destruction of the initiators used in airbag gas generators.

It applies to the production, storage, transport and destruction of initiators for airbag gas generators. Using organizations apply it by reference.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies; for undated references, the latest edition, including all amendments, applies.

GB 50016, Code for fire protection design of buildings. GB 50089, Safety code for design of civil explosive material engineering. GB 28263, Safety management rules for enterprises producing and selling civil explosive articles. WJ 1912, Safety rules for electrostatic protection in the production of electric initiating explosive devices. WJ 2470, Safety code for the design of hazardous buildings for small quantities of propellant and explosive and their products. Safety technical specification for blasting material transport vehicles, issued as document Ke Gong Bao 2001 No. 156 of the Commission of Science, Technology and Industry for National Defence.

3 Safety technical requirements

3.1 The calculated charge quantity of a hazardous building is the sum of the quantities of dangerous goods inside the building that can detonate or burn at the same time. The stored charge quantity of a hazardous building is obtained by converting that calculated quantity into its TNT equivalent.

3.2 Where the stored quantity of explosives and their products in a hazardous workshop does not exceed 10 kg, the quantity in a hazardous magazine does not exceed 50 kg, and the quantity of propellant and its products in a hazardous building does not exceed 100 kg, the engineering construction shall meet the requirements of WJ 2470. Above those quantities the engineering construction shall meet the requirements of GB 50089.

3.3 The hazard grades of the production operations and stores for airbag gas generator initiators are given in Table 1. The hazard grade of a hazardous building is set from the highest hazard grade among the dangerous goods it holds. Other, non-hazardous buildings are given their fire hazard category in accordance with GB 50016.

Table 1 assigns a hazard grade and, where applicable, a technical requirement to each production operation and store. The rows cover the mixing, temporary holding, charging and pressing of ignition and priming compositions; assembly, including welded sealing and injection moulding, together with inspection and packing; the testing and inspection of ignition composition, priming composition and initiators; the initiator store; and the transit store for ignition and priming compositions. The one technical requirement entered in the table calls for the first of these operations to be carried out in a blast-resistant cubicle or under a protective device. Two notes state that the value in brackets after each hazard grade is the corresponding grade in WJ 2470, and that entries printed in bold type are mandatory. The hazard grade codes themselves are not reproduced here: the grade column carries merged cells and the pairing of grades to rows could not be settled with certainty from the scan.

3.4 Protective separation measures shall be taken between a hazardous production operation and the operations next to it. The store for dangerous goods shall be a separate building.

3.5 Electrostatic protection in production shall meet the requirements of WJ 1912. The workroom of a production operation of hazard grade 1.2, class Bx, shall have a non-sparking, antistatic or conductive floor.

3.6 Where the quantity of exposed dry dangerous goods held inside a workroom of a hazardous building exceeds 1 kg, a deluge fire-fighting system meeting the requirements of WJ 2470 shall be installed.

3.7 During production, the temperature in the workroom of a hazardous production operation should be 16 °C to 30 °C and the relative humidity should be 50 % to 70 %.

3.8 The classification of the electrically hazardous area and the lightning protection category of each workroom or building are given in Table 2.

Table 2 has four columns - serial number, name of the workroom or building, hazardous area classification and lightning protection category - and four rows, and it was read in full. The rows cover mixing, temporary holding, charging and pressing; assembly, including welded sealing and injection moulding, with inspection and packing; the initiator store; and the transit store for ignition and priming compositions. The hazardous area classes assigned to those four rows are F1, F2, F2 and F0 in that order, and all four rows are placed in lightning protection Class I.

3.9 Products shall be placed in separate compartments inside the packing case and

secured.

3.10 Road transport of the product outside the works shall use dedicated vehicles complying with the Safety technical specification for blasting material transport vehicles.

3.11 Rejects shall be destroyed by burning, which includes firing initiators electrically.

3.12 Beyond the requirements above, the general layout and the internal and external distances of the works built for producing airbag gas generator initiators, the process layout, the building structure, the electrical installations, the fire-fighting water supply and the waste water treatment, and the heating, ventilation and air conditioning shall meet the requirements of GB 50089 or WJ 2470. Production safety management shall meet the requirements of GB 28263.