Hazardous Waste Temporary Storage Room

1、 Work process

The hazardous waste temporary storage room adopts an integrated process of "closed storage+zone control+safety protection+waste gas anti-seepage+intelligent warning", which fully conforms to the closed-loop management requirements of hazardous waste temporary storage. The core process flow is clear and controllable, and is suitable for various short-term hazardous waste temporary storage scenarios.

Firstly, complete the site selection and fixation of the facilities, choose a flat outdoor site away from fire sources, water sources, and densely populated areas, do a good job of foundation leveling, and ensure that the box is stable and not tilted; Subsequently, internal zoning will be completed according to the types of hazardous waste, and hazardous waste of different properties and categories will be classified and placed. It is strictly prohibited to mix incompatible hazardous waste to avoid chemical reactions that may cause safety accidents. The fully enclosed structure of the box is combined with a forced ventilation system to discharge volatile and harmful gases inside in real time. At the same time, the exhaust gas is treated by the top exhaust gas purification device and discharged in compliance with standards, eliminating direct discharge of exhaust gas that pollutes the environment.

The bottom is equipped with a dedicated anti-seepage tray and leakage collection system, which can effectively receive the leaked liquid generated by the damage of hazardous waste packaging, prevent soil and groundwater pollution caused by leakage, and achieve full collection and zero overflow of waste liquid. The supporting explosion-proof accessories operate in a coordinated manner throughout the entire process, with explosion-proof lighting, explosion-proof ventilation, and explosion-proof circuit systems adapted to flammable and explosive hazardous waste storage scenarios. Equipped with temperature, humidity, and gas concentration monitoring devices, internal environmental parameters are monitored in real time, and automatic warning and emergency ventilation are activated when exceeding the standard, fully preventing safety risks such as fire, explosion, leakage, and corrosion. After the hazardous waste accumulates to the transfer volume, it should be

transported out and handed over according to the hazardous waste transfer specifications. After clearing the temporary storage room, the interior should be cleaned and reused.



2、 Core parameters

（1） Main parameters of the box body

Material specification: thickened corrosion-resistant, fireproof and explosion-proof plates are used, the mainstream is cold rolled steel plate+fireproof rock wool interlayer/FRP corrosion-resistant material, the outer wall is treated with anti-static and anti-corrosion treatment, the wall thickness is not less than 2mm, the overall structure is stable, and the impact resistance and aging resistance are excellent

Anti leakage performance: high-density HDPE anti-seepage film or epoxy resin anti-seepage layer is laid at the bottom, with a thickness of ≥ 2mm and a permeability coefficient of ≤ 1.0×10^{-10} cm/s. It is equipped with a leakage collection pool, with a volume not less than 1/5 of the maximum internal hazardous waste container volume, to achieve full absorption of leaked waste liquid

Bearing capacity: Ground bearing capacity ≥ 5kN/㎡, can meet the requirements of conventional hazardous waste packaging drums and bagged hazardous waste stacking, and is suitable for various small and medium-sized hazardous waste generation scenarios

Ventilation system: equipped with forced explosion-proof ventilation device, air exchange rate ≥ 6 times/hour, top equipped with exhaust gas purification module, VOCs removal rate ≥ 90%, compliant emissions

Fire resistance rating: The overall fire resistance rating is ⩾ A, the fire resistance limit is ⩾ 2 hours, and it has good flame retardant and fire resistance performance to prevent fire hazards

(2) Explosion proof accessory parameters

Explosion proof configuration: The entire set of circuits, lighting, and ventilation equipment have passed explosion-proof certification and are compatible with Ex d IIC T6 explosion-proof level, meeting the safety requirements for storing flammable and explosive hazardous waste

Monitoring system: built-in temperature and humidity sensors, harmful gas detectors, monitoring response time ⩽ 30 seconds, automatic sound and light warning for exceeding standards

Supporting facilities: equipped with dedicated hazardous waste identification signs, emergency equipment cabinets, anti-static grounding devices, anti-theft door locks, meeting national standard identification and emergency control requirements

Mobile performance: With an overall modular design, it can be moved by forklifts and cranes without the need for complex on-site construction, and can be used immediately upon landing

3、Instructions for use

Preparation and Installation: Before installation, choose an outdoor hardened and flat site, away from open flames, heat sources, drinking water sources, and living areas, avoid rainwater washing low-lying areas, and ensure proper drainage of the site; Place the box steadily using a forklift or crane, connect the explosion-proof circuit and ventilation system, check if the grounding device is secure, and post the national standard for hazardous waste storage

Identification, warning signs, and hazardous waste category labels, complete equipment debugging to ensure the normal operation of ventilation, monitoring, and explosion-proof systems.

Hazardous waste storage regulations: Strictly implement the principle of classified hazardous waste storage, separate incompatible hazardous wastes (such as acid and alkali, redox, flammable, explosive, and corrosive), and set up clear isolation areas; The hazardous waste packaging is intact and well sealed, arranged neatly and orderly, and excessive or high stacking is strictly prohibited; Establish a hazardous waste storage ledger, detailing the

name, category, quantity, storage time, and transportation time of hazardous waste, ensuring that the accounts match the materials and keeping them for future reference.

Daily operation and inspection: Check the airtightness of the temporary storage room, ventilation system, monitoring device, leakage collection system, and the operation status of explosion-proof accessories daily, clean up leaked waste liquid and debris; Regularly check whether the anti-seepage layer is damaged, whether the circuit is aged, and whether the markings are clear. If any abnormalities are found, immediately stop using it for rectification; Unauthorized personnel are strictly prohibited from entering. Operators should take personal protective measures and wear protective gloves, masks, goggles, and other protective equipment.

Transfer and emptying: After the hazardous waste reaches the storage limit or storage period, contact qualified hazardous waste disposal units for transfer, and strictly implement the hazardous waste transfer manifest system; After the transfer is completed, thoroughly clean the interior of the temporary storage room, remove any leaks, residues, and debris, check the integrity of the equipment, and prepare it for future use; The storage period strictly follows the national standard requirements and hazardous waste shall not be stored beyond the expiration date.

4、 Product advantages

Strong compliance and full compliance throughout the process: Designed and produced strictly in accordance with HJ2025-2012 and GB18597-2023 national standards, the core indicators of anti-seepage, fire prevention, explosion prevention, waste gas treatment, and leakage control fully meet environmental regulatory requirements. No additional modifications are required, and the product can be used in compliance with regulations, avoiding the risk of penalties for illegal storage.

Convenient mobility and flexible adaptation: With an integrated modular design, it has a moderate volume and can be moved as a whole without the need for civil construction. It is not limited by fixed sites and is suitable for various small and medium-sized waste production units, temporary work sites, and remote factory areas. The placement position can be flexibly adjusted according to the amount of waste production and site conditions, and the reuse rate is high.

Comprehensive safety protection and controllable hidden dangers: integrating explosion prevention, fire prevention, anti-seepage, leak prevention, exhaust gas

purification, and intelligent monitoring, it comprehensively blocks safety hazards such as hazardous waste leakage, volatilization, fire, and explosion. It is equipped with a real-time monitoring system for the internal environment, greatly reducing the safety risks of temporary storage of hazardous waste and ensuring the safety of personnel and the surrounding environment.

Simple operation and maintenance, low cost: no need for professional personnel on duty, convenient daily inspection and maintenance, low operating threshold; The overall material is corrosion-resistant, anti-aging, and has a long service life. Compared with the traditional temporary storage of hazardous waste from civil engineering, it saves the cost of civil engineering construction and later transformation, and has higher cost performance.

Sealed and environmentally friendly, zero pollution emissions: The fully enclosed structure, combined with exhaust gas purification and anti-seepage leakage system, eliminates the disorderly discharge of hazardous waste gas and the leakage of waste liquid that pollutes soil and groundwater, achieving environmental protection and controllability throughout the temporary storage of hazardous waste, in line with green production and ecological environmental control requirements.

5、 Applicable industries

The product is suitable for various industries and scenarios that generate hazardous waste, especially for small and medium-sized waste production units, temporary operation projects, and enterprises without fixed temporary storage facilities. The core applicable industries are as follows: chemical industry, pharmaceutical industry, mechanical processing and automotive industry, electronics and semiconductor industry, scientific research and testing institutions, construction and construction industry and other hazardous waste storage scenarios.

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