

# Perfluorohexanone gas fire extinguishing device for energy storage power station

Does a plunger type perfluorohexanone (C<sub>6</sub>F<sub>12</sub>O) fire extinguishing device work?

In this study, a plunger type perfluorohexanone (C<sub>6</sub>F<sub>12</sub>O) fire extinguishing device was developed, and key components such as gas generating device and puncture valve were improved. The 271 Ah lithium iron phosphate battery was used to verify the fire extinguishing efficiency and environmental adaptability of this device in extreme environments.

Is perfluorohexanone a fire extinguisher?

Perfluorohexanone is a fluorinated ketone compound. It is a colorless, odorless, and easily vaporized liquid fire extinguishing agent at room temperature. No residue is left after evaporation. The main fire extinguishing mechanism is chemical suppression and flame cooling. The relevant physical parameters are listed in Table 1.

How does perfluorohexanone work?

The device is in a storage pressure (perfluorohexanone) when it is not working, and it can be activated with a small current immediately when a fire signal is received. A pressure cavity is formed at the front end of the sealed cavity as a power source, and the perfluorohexanone is atomized by an atomizing nozzle.

What are the physical properties of perfluorohexanone?

Physical Parameters Perfluorohexanone is a fluorinated ketone compound. It is a colorless, odorless, and easily vaporized liquid fire extinguishing agent at room temperature. No residue is left after evaporation. The main fire extinguishing mechanism is chemical suppression and flame cooling.

Does perfluorohexanone fire extinguish lithium ion batteries?

Wang et al. have studied the fire extinguishing effects of perfluorohexanone on lithium-ion batteries. The study showed that perfluorohexanone could effectively extinguish the fire of lithium-ion batteries, and extinguished the open flame within 30 s. Liu et al. tested the application of perfluorohexanone to single LIB cells.

How long does perfluorohexanone spray last?

The duration of perfluorohexanone spray was 45 s. The shorter time to extinguish the fire is mainly because of the rapid increase of internal pressure of fire extinguishing device under high temperature. After the extinguishing, the intervening ignition was carried out with an open flame, and there was no re-ignition phenomenon.

Perfluorohexanone (C<sub>6</sub>F<sub>12</sub>O) is a new-generation fire suppressant designed to combat electrical fires. At room temperature and pressure, it is a colorless, odorless, and non ...

1. A lithium battery cooling and fire extinguishing system for an energy storage power station is characterized by comprising a battery cabinet, a liquid cooling circulating unit, a high-pressure ...

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The perfluorohexane automatic fire extinguishing device has a small volume and is flexible and convenient to install. ... Energy storage power station. Lithium battery pack. New energy vessels. Energy station. Test site. ... Gas ...

In this study, a plunger type perfluorohexanone (C<sub>6</sub>F<sub>12</sub>O) fire extinguishing device was developed, and key components such as gas generating device and puncture valve were ...

Tests have proven that the small strip-shaped NOVEC 1230 fire extinguisher is a clean product and an ideal alternative to halons. NOVEC 1230 fire extinguisher is a non-pressurized storage perfluorohexane cooling and ...

: ,,? ...

As the photovoltaic (PV) industry continues to evolve, advancements in Energy storage power station perfluorohexanone have become critical to optimizing the utilization of renewable ...

The spray mode based on atomizing nozzles makes it difficult for the extinguishing medium to accurately reach the intended extinguishing position due to factors such as the injection angle, distance, or retarder under actual ...

3.4 Energy Storage Systems Energy storage systems (ESS) come in a variety of types, sizes, and applications depending on the end user's needs. In general, all ESS consist ...

In this study, a plunger type perfluoro-rohexanone (C<sub>6</sub>F<sub>12</sub>O) fire extinguishing device was developed, and key components such as gas generating device and puncture ...

239 UDK 004.8 CASCADE WARNING SYSTEM AND AUTOMATIC FIRE EXTINGUISHING DEVICE FOR THERMAL RUNAWAY OF ENERGY STORAGE BATTERY De-en Song, Liang ...

Fire suppression scheme of electrochemical storage tank = detection and alarm system (very early advance detection) + fire extinguishing system of electrochemical storage tank (spray ...

Aerospace Kangda has obtained a number of invention patents for perfluorohexanone fire extinguishing agent and fire extinguishing equipment, and has more than 20 independent ...

In 2012, Hochiki Corp, the first Japanese manufacturer of disaster prevention products, applied for a patent "Power storage device" (No. JP2014082108A [59]) for a fire ...

Then the fire cylinder valve is opened, and extinguishant is released into the protected zone.

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Perfluorohexanone (FK-5112) is a colorless, odorless, and non-conductive gas extinguishant ...

Fire Alarm for Energy Storage Power Station Automatic Fire Extinguisher ... communities, highway service areas, gas stations, shopping malls. Fire Fighting Safety Equipment Fire ...

“Explore the benefits of Perfluorohexanone (FK-5-1-12) in safeguarding new energy storage systems. Learn how this clean, efficient fire suppressant provides superior ...

Zhige TAO, Shunbing ZHU, Shuangping HOU, Ke LI, He WANG. Comprehensive research on fire and safety protection technology for lithium battery energy storage power ...

The Perfluorohexane fire extinguisher is a device that automatically extinguishes fires in power distribution cabinets and energy storage battery packs. It consists of a 304 stainless steel shell, gas-generating components, ...

The invention can effectively extinguish fire in the energy storage battery compartment and inhibit thermal runaway development, does not have harm and damage effects on a protected object,...

In this study, the thermal runaway (TR) suppression test platform of battery modules was built based on the real power battery pack to reduce the thermal runaway propagation ...

However, heat abuse conditions will lead to the thermal runaway of lithium batteries [7][8]. Perfluorohexanone (chemical formula:  $C_6F_{12}O$ ) is a new type of clean fire ...

: ,,?, ...

Fire cases of energy storage containers and causes of fires. The safety of energy storage power station is not limited to lithium batteries, if any link of the energy storage system fails, it may cause firesafety accidents, among which, safety ...

Fire Science and Technology >> 2025, Vol. 44 >> Issue (2): 217-222. Previous Articles Next Articles Experiment on perfluorohexane fire suppression device for liquid-cooled ...

Aerospace Kangda has obtained a number of invention patents for perfluorohexanone fire extinguishing agent and fire extinguishing equipment, and has more than 20 independent intellectual property rights of ...

As shown in Fig. 3, the experimental platform contained an LIB box and a fire-extinguishing device, and the latter was connected to the power battery box through a metal ...

In August 2021, the project leader of Jjitan Coal Mine learned that the perfluorohexanone automatic fire

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extinguishing device developed by our company has the characteristics of high ...

2.2. Fire Extinguishing Device The Schematic diagram of the fire extinguishing device structure is given in Fig. 3. It is composed of PCB control board, gas generating device, ...

The CNF system utilizes a pushcart-type foam fire extinguishing device with a 200 L capacity and a working pressure range of 0.2-0.9 MPa, maintaining a gas-liquid ratio of 6:1. ...

This work built a lithium-ion battery combustion-inhibition experimental platform, took a ternary aluminum shell power lithium-ion battery monomer with a rated capacity of 150 A·h as the research object, induced ...

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