

PMDA Medical Safety Information

Pharmaceuticals and Medical Devices Agency

pmda No.59 August 2020

Outbreak of Fire from Medical Devices Due to a Short Circuit

POINT Key points for safe use

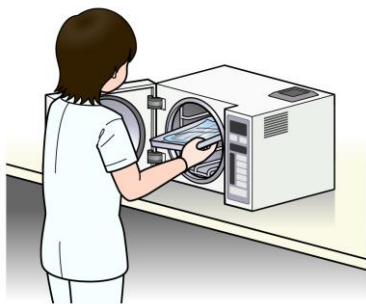
(Case 1) A large amount of dust had accumulated between the outlet and the power plug. The dust ignited and along with smoke, a fire started behind the bedside monitor.

1 Precautions when using installation-type (stationary) medical devices

- Medical devices used for a long time with the outlet plugged into a power supply should be inspected and cleaned on a regular basis so that dust will not accumulate between the outlet and the power plug.

An example of devices used at the same place for a long time

Fixed-type device



Sterilizer, central monitor, etc.

Stationary-type medical device



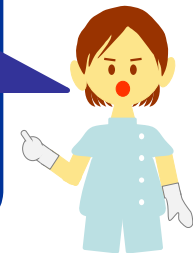
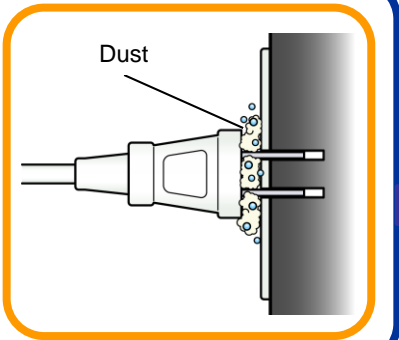
Dental unit, operating table, etc.

Medical device for testing



Electrocardiograph, ultrasound diagnostic device, etc.

Water in the air adheres to dust buildup between the outlet and the power plug, creating a flow of electricity which can cause a short circuit between the inserted plug blades (metal part at the tip). The short circuit results in overheating of the surrounding area and leads to the risk of fire.

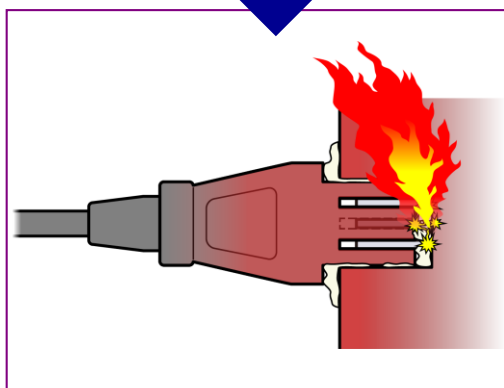
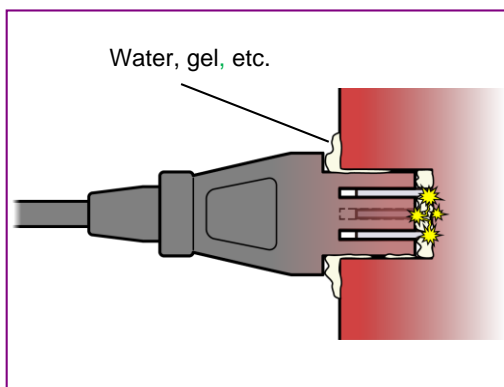
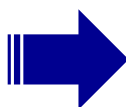
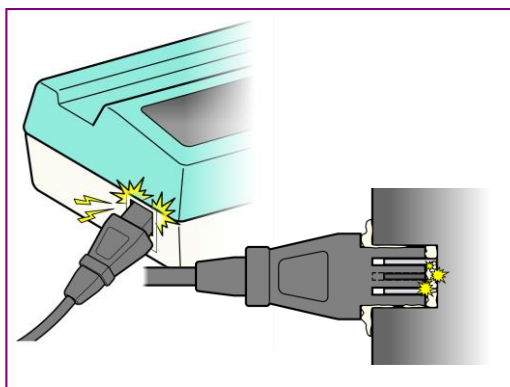


(Case 2) While a drug was administered by a syringe pump, fire started from the insertion port of the power plug in the syringe pump.

2 Precautions when starting operation by connecting the power cord.

- **Tightly connect the power plug with the insertion port.**
- **Please ensure that neither water nor gel has adhered to the area between the power plug and the insertion port.**

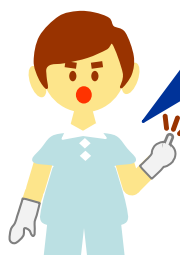
An example of an ignition mechanism



Syringe pump damaged by fire



Replication Experiment at the Fire Department
(Photo provided by Daiken Medical Co., Ltd).



As with dust, a short circuit may occur when the connection is insufficient between the power plug and the insertion port of the device or when substances such as water and gel adhere to the connected parts. Please be aware that such cases can result in heating or ignition!
When dust, water, gel, etc. adhere to the power plug, first remove the plug. Then, wipe the part with a dry cloth and use the medical device!

About this information

- PMDA Medical Safety Information is issued by the Pharmaceuticals and Medical Devices Agency for the purpose of providing healthcare providers with clearer information from the perspective of promoting the safe use of pharmaceuticals and medical devices. The information presented here has been compiled, with the assistance of expert advice, from cases collected as Medical Accident Information Reports by the Japan Council for Quality Health Care, and collected as Adverse Drug Reaction and Malfunction Reports in accordance with the Law on Securing Quality, Efficacy and Safety of Pharmaceuticals and Medical Devices.
- We have tried to ensure the accuracy of this information at the time of its compilation but do not guarantee its accuracy in the future.
- This information is not intended to impose constraints on the discretion of healthcare professionals or to impose obligations and responsibility on them, but is provided as a support to promote the safe use of pharmaceuticals and medical devices by healthcare professionals.

Access to the most up-to-date safety information is provided via the PMDA Medi-navi service.

