



United States

Consumer Product Safety Commission

Preliminary Assessment of Warnings and Instructions of Portable Electric Heaters

February 2024

Matthew Barzola, Engineering Psychologist

Division of Human Factors

Directorate of Engineering Sciences

This report was prepared by the CPSC staff. It has not been reviewed or approved by, and may not represent the views of, the Commission.



Introduction:

CPSC Directorate of Engineering Sciences, Division of Human Factors (HF) staff conducted a preliminary evaluation of the safety disclosures and usage instructions for portable electric heaters. The information is a supplement to the CPSC staff report, *CPSC Staff Assessment on Portable Electric Heaters*,¹ and is in response to the question posed in a letter from Senator Cantwell and Senator Blumenthal (January 14, 2022), excerpt copied below.

Fourth, we ask that the CPSC review safety disclosures and usage instructions on packaging, retailer websites, and online platforms to ensure such disclosures are prominent and clear. The CPSC should make such findings available to the public as soon as possible.

HF assessment focused on the safety disclosures and usage instructions present on the heaters themselves, their packaging, and online websites that sell these products, including retailer websites and online platforms. The 10 heater samples that staff evaluated were based on models discussed in the CPSC staff portable electric heater report.²

The 10 heater samples that staff evaluated include 3 heaters that were verified as being certified to the voluntary standards, 4 heaters that were not certified to the voluntary standards, and 3 heaters that were identified with possible counterfeit certification markings.

A part of this evaluation also included utilizing UL 1278, *Movable and Wall-or Ceiling-Hung Electric Room Heaters*, safety requirements related to warnings and informational text as a reference point.

From this evaluation HF staff has identified various issues on how the safety information is presented online, on the product, in the manuals and instructions, and on the packaging. Main issues found were non-compliance with the on-product marking/labeling and user manual-related requirements of the UL 1278 standard; unclear and inadequate safety statements; marketing images showing unsafe practices; and counterfeit products.

HF staff assesses that while providing clear warnings and instructions to consumers is important, it is the last resort in the safety hierarchy and preferred only after attempting to design out or guard against the hazards because of its limited effectiveness. In addition, given the documented link between poverty and elevated fire risk,³ it is especially important to ensure

¹ Lee, A. and Heimbach, E. (February 2023), *CPSC Staff Assessment on Portable Electric Heaters*, Division of Electrical Engineering, Directorate of Engineering Sciences, US Consumer Product Safety Commission, Bethesda, Maryland, <https://www.cpsc.gov/content/CPSC-Staff-Assessment-on-Portable-Electric-Heaters>

² Coded portable heater samples S1, S2, S4, S5, S6, S13, S21, S24, S25, and S27.

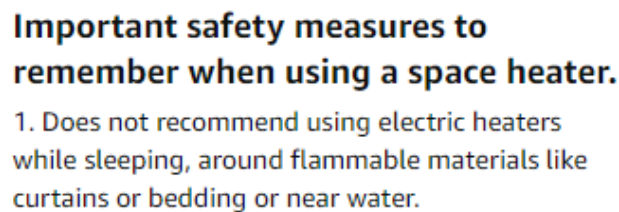
³ Poverty Fire Risk. (n.d.). nfpa.org. Retrieved October 4, 2023, from <https://www.nfpa.org/education-and-research/research/nfpa-research/fire-statistical-reports/poverty-and-the-risk-of-fire>

that portable electric heaters that will be purchased and used by low-income individuals fully follow the safety requirements as specified in UL 1278.

Online marketing:

HF staff reviewed the subject product listings on retailer websites (3 webpages) and major online platforms (12 webpages) and found that most of the online product listings did not include any sort of safety disclosure; for those that did, there was inadequate communication of the hazards with portable electric heater use, or inappropriate portable electric heater use was marketed, or both.

For example, in one online platform's product listing, the statement "Does not recommend using electric heaters while sleeping, around flammable materials like curtains or bedding or near water" is shown towards the center of the page (See Figure 1.)



**Important safety measures to
remember when using a space heater.**

1. Does not recommend using electric heaters
while sleeping, around flammable materials like
curtains or bedding or near water.

Figure 1. Example of non-formatted safety warning

In addition to the confusing lack of a sentence subject (*i.e.*, who does not recommend?), the phrase "[d]oes not recommend" does not appropriately signify the severity of the fire and shock hazards presented by portable electric heaters. HF staff assesses that a more definite phrase such as "Do not use" alongside a warning signal word and the safety alert symbol (exclamation mark in a triangle) would be a more appropriate warning.

In another online product listing, the statement "Warm [*sic*] Notice: Do not use the heater in the immediate surroundings of a bath, a shower or a swimming pool..." is included in a multi-sentence product description found in the center of the web page (See Figure 2).

Product Description

🔊🔊🔊 Why choose our Portable Electric Space Heater? 🔊 Safety protection is made of PTC ceramic heating technology with a drop switch on the bottom of the product. It will automatically close when it is out of touch or tipped over. 🔊 Wide-angle automatic oscillation ensures large angle heating. The heater can be rotated at an angle of 70 degrees, and our heating fan rotates to expand coverage to quickly, evenly and safely heat your interior; the advantage of a panel heater. 🔊 PTC Ceramic Heating Technology Our electric ceramic heaters do not overheat, while at the same time saving energy, safety and long service life. It can output wind quickly. 🔊 Save on overall heating costs, use a portable heater to heat your room and lower the thermostat throughout the room. This also reduces wear on the main heating system. 🔊 Low noise of 45 decibels will not affect your sleep, reading, and work. Portable ceramic space heaters are available for both men and women, regardless of age, and are ideal for use in offices, homes, dormitories, bedrooms, etc. 🔊 You can choose the hot, warm or fan-only mode, warm in winter and cool in summer. Its fan mode produces natural air circulation without adding heat and is designed with a thermostat to provide individual comfort. *Specifications *Weight: 3lbs *Voltage: 120V *Frequency: 50Hz *Output Power (W): 1200W *Dimensions: 6.5in X 6.5in X 11.5in **Warm Notice: Do not use the heater in the immediate surroundings of a bath, a shower or a swimming pool. In case of automatic overheat shut off, unplug the heater & wait about 30 minutes to cool down, then reset the heater.**

Figure 2. Example of non-formatted safety warning (highlighted in yellow)

In this case, there are three issues with the statement. Although it attempts to communicate a hazard, the statement is shown at the end of a paragraph about the product description, which is unlikely to be noticed by consumers; the paragraph is all formatted in small font sizing that is difficult to be noticed, and the use of the term "Warm" is incorrect and should instead be "Warning" as the word "Warm" does not alert the reader to a safety issue. These issues would lead to consumers likely skimming past the statement, and as a result, not perceiving the statement as a warning.

Regarding retailer websites, out of the 10 heaters reviewed, only 2 were found to be sold on the firms' websites. HF staff did not find any warnings related to a portable electric heater's associated hazards.

Currently, there is no standard related to online safety information for portable electric heaters. However, HF staff assesses that the critical safety information about portable electric heaters should be presented on the product website and/or product listings to inform the consumer about the product and its use. According to a CPSC-funded study investigating placement and design of warnings on e-commerce sites, warning information should be immediately visible to the user, require minimal effort to see, be visually separated from nearby text, and have styling features to make it easier to find and more likely to be noticed, and be displayed with safety alert symbol (exclamation mark in a triangle).⁴

In addition, current products on an online marketplace and retailer websites have shown concerning marketing images that demonstrate unsafe use scenarios. Every product observed has shown marketing images with portable electric heaters being close to flammable products (fabrics, clothes) and/or has shown the product unattended as seen in Figures 3-5.



Figure 3. Non-certified portable electric heater marketing image showing hazardous use close to curtains and during sleep.

⁴ [The Placement and Design of Warning Labels on E-commerce Sites | CPSC.gov](https://www.cpsc.gov/ELCResources/CPSC_Fundamentals/04-Warning-Labels)



Figure 4. Portable electric heater with possible counterfeit certification markings with marketing image showing hazardous use close to fabrics.

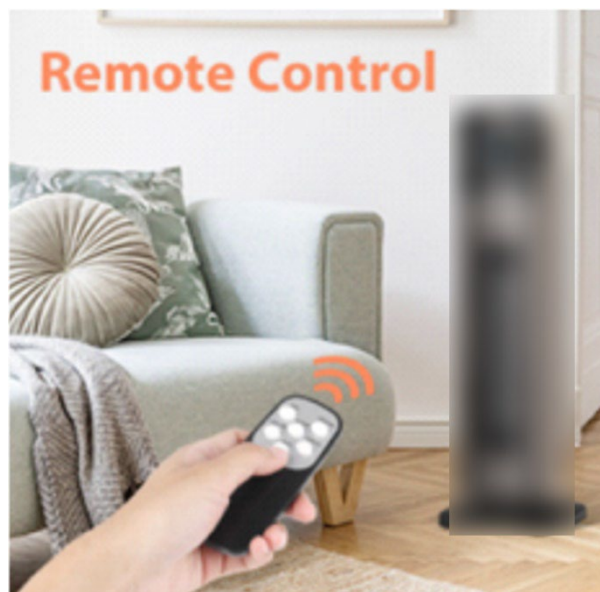


Figure 5. Non-certified portable electric heater marketing image showing hazardous use close to flammable items such as the couch, decorative pillows and blanket.

On-Product Warnings and Compliance with UL 1278:

HF staff observed that some portable electric heaters on the market, even those that are marketed with certification markings and/or testing lab logos, are not completely following the requirements specified in UL 1278. These requirements include the delivery of safety information to be physically communicated to consumers as they set up and use their portable electric heater.

Figures 6 and 7 show a portable electric heater that was sold with third-party lab certifications, but that did not meet UL 1278's requirements for markings. The heaters in these figures were determined to be marketed with counterfeit certifications.

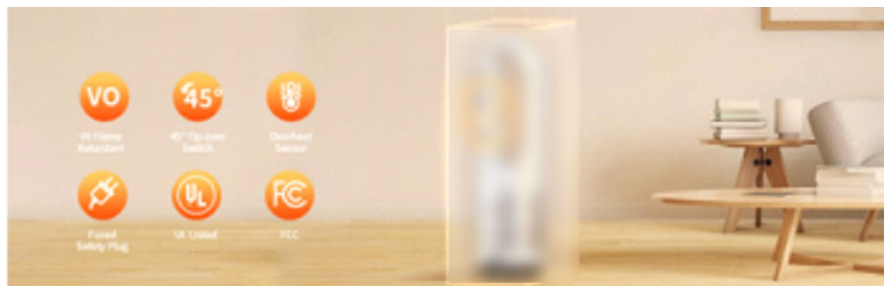


Figure 6. Portable electric heater marketed online with UL certification.⁵



Figure 7. Space portable heater with UL and ETL certifications on packaging.⁶

⁵ UL is a Trademark of Underwriters Laboratories

⁶ ETL and UL are Trademarks of Intertek and Underwriters Laboratories



Figure 8. Non-compliant with UL 1278, section 67.14 warning label.

For the heater in Figure 8, staff determined that the heater did not follow the following requirements:

“67.14: A movable or wall-hung heater of a type other than covered in 67.13 shall be marked on a surface that is visible from the front of the heater with the following wording: “CAUTION – High temperature, keep electrical cords, drapery, and other furnishings at least 3 feet (0.9 m) from the front of the heater and away from the side and rear.” The marking shall be readily visible and shall have the minimum dimensions specified in 67.15.”

“67.15 With respect to 67.8, 67.9, 67.13, 67.14, 67.16, and 67.17 readily visible means visible from a point 5 feet (1.5 m) above the floor and between 1 and 4 feet (0.3 and 1.2 m) away from the front surface of the heater when the heater is placed in the intended use location. The marking shall be in letters not less than 1/8 inch (3.2 mm) in height and shall be of a permanent type and in a color that contrasts with that of the enclosure or background.”

Figure 8 shows the only warning label for the portable electric heater. The heater had possible counterfeit markings on the products and/or packaging.

Based on section 67.14, the portable electric heater shown in Figure 8 would fail to meet the requirement because the exact wording specified in the UL standard is not utilized. In addition, based on section 67.15, the portable electric heater would fail to meet the requirement because of its non-permanent nature (the warning is a sticker label). The portable electric heater also came with a non-compliant manual, as the safety instructions and precautions for the space heater relating to the risk of fire, electric shock, and injury to persons were in the back of the manual, which is contrary to what is required in section 68.1.2. Section 68.1.2 has the following requirement: *“The instructions relating to the risk of fire, electric shock, and injury to persons*

shall be a permanent part of the manual, but separated in format from the other instructions and shall appear before the operating instructions in the manual."

HF staff concludes that most of the portable electric heaters that were evaluated have inadequate amount of or poorly designed safety information in on their physical products.

Manuals/Instructions:

Staff reviewed 10 manuals/instructions from portable electric heaters used in the CPSC Staff report, *CPSC Staff Assessment on Portable Electric Heaters*. The 10 heater samples that staff evaluated include 3 heaters that were verified as being certified to the voluntary standards, 4 heaters that were not certified to voluntary standards, and 3 heaters that were identified with possible counterfeit certification markings.

Staff observed that all 10 heaters were not completely compliant with the user manuals/instructions related safety requirements of UL 1278. Heaters provided either insufficient or inadequate instructions to consumers. Staff noted the following problems with the heaters: Insufficient/inadequate communication of an electric shock hazard, risk of fire, how to properly store heaters when not in use, how to properly store cords, and other warnings.

Packaging:

Staff reviewed the 10 packages for the portable electric heaters. Staff did not observe warnings in 7 of the packages, 2 had several warnings in paragraph or list form but not in the proper warning format and 1 heater had a warning about not allowing children under 10 to use the product.

Conclusion:

HF staff discussed safety components of 10 portable electric heaters, focusing on their on-product warning labels, user manuals, and online marketing. The 10 heater samples that staff evaluated include 3 heaters that were verified as being certified to the voluntary standards, 4 heaters that were not certified to voluntary standards, and 3 heaters that were identified with possible counterfeit certification markings.

Staff found that most of these heaters were not compliant with the portable electric heater safety standard UL 1278 regarding their warning label and user manual safety requirements. In addition, staff has found various concerning marketing images and safety statements that could affect how consumers perceive the safety risks associated with portable electric heaters. Staff

also uncovered that some heaters that were marked with third party lab certification were counterfeit markings, which could possibly give a false sense of safety for consumers. Staff assesses that portable electric heaters should fully follow the safety requirements as specified in UL 1278, including heaters which will be purchased by consumers with limited income.