ENVIRONMENT, HEALTH & SAFETY
UNIVERSITY OF MICHIGAN

Safety Alert: Hot Plates Manufactured prior to 1984

Issue Date: 3/27/19

Applies To: All University Faculty, Staff, and/or Students using hot plates.

In recent years, there have been incidents across the country of hot plates spontaneously heating in the OFF position. In some instances, these malfunctions have led to fires and explosions. Hot plates manufactured prior to 1984 do not have temperature feedback controls. As a result, they may spontaneously heat with the heater dial in the OFF position.

Lawrence Berkley National Laboratory, the University of California, University of Pennsylvania, MIT, Oak Ridge National Lab, Northwestern University and University of Illinois have issued safety warnings due to incidents on their campuses related to hotplate malfunction.

To follow the direction of these other institutions, Environment, Health & Safety is issuing this safety alert and ***strongly recommends*** that hot plates manufactured prior to 1984 should be discarded and replaced with new units as soon as possible. Additionally, if any hot plate currently being used is having any issue with temperature controls or other issues, it should be immediately replaced. Special pricing has been negotiated with Fisher-Scientific to help with this process.

How to Acquire a New Stirring Hotplate:

Step 1: Identify units that were manufactured prior to 1984 or that are not maintaining their temperature settings accurately. A list of equipment identified as having reported issues is on Page 3.

Step 2: Contact your local Fisher Scientific sales Representative for a quote with the special pricing discount. Contact Katie Gignac at Katie.Gignac@thermofisher.com

Step 3: Place your order using the Fisher quote and Fill out an equipment decontamination form here: http://ehs.umich.edu/forms/laboratory-equipment-owner-decontamination/

Step 4: Decontaminate your old hot plate using bleach for biological and Simple Green for chemicals, cut off the electrical cord and bring it to the building electronic waste bin as indicated below:

BUILDING	LOCATION	BUILDING	LOCATION
Aerospace Engineering / FXB	FXB Dock	LSI	Room 2299
Arbor Lakes 2	Dock	Lurie Biomedical Engineering Bld	Dock
Art & Architecture	Dock	MBNI	Dock
Auxiliary Services Building, 1919 Green Rd	Dock	Med Sci II	Dock 2
Beyster Building	Dock	Mott Children Hospital	Dock 9
BSRB	Dock 7	NC Housing Warehouse, 3261 Baxter Rd	Warehouse

BUILDING	LOCATION	BUILDING	LOCATION
Cancer Center	Dock	NCRC Building 90	Room 109
Chemistry	Dock	NCTF Transfer Pad	Transfer Pad
Climate & Space Research	Dock	Property Disposition Warehouse	Dock
CSSB	Dock	Property Disposition Trailer	Trailer
GG Brown	Dock	Wolverine Tower	Dock
Kellogg Eye	Dock		

Step 5: Once old hot plate is recycled, contact Katie Gignac to get your FREE stir bar kit!

Recommendations pertaining to use of all hot plates:

- Any hot plate that is not functioning properly or is in disrepair should be immediately discarded/replaced as indicated above: http://ehs.umich.edu/wp-content/uploads/2019/02/UMich-SHP-trade-in-Promo-2019-.pdf
- Periodically test the function of the off switch to verify that it works and the heating device quickly cools. If the device fails the test, take it out of service immediately.
- Unplug all hot plates when not in use.
- If heating is not needed, use a stir plate, not a stirring/hotplate combination.
- When acquiring new hot plates, select a housing design that is hermetically sealed to protect electronics from liquids and gases. In addition look for two independent temperature control circuits that shut off power when the temperature exceeds a selected limit.
- If an external probe shows occasional malfunctioning such as temperature deviation or fluctuations, take it out of service immediately and discard/replace as indicated above.

Additional Resources:

-MIT Environment, Health and Safety, n.d.https://ehs.mit.edu/site/laboratory-safety/unsafe-hot-plates
-University of California Agriculture and Natural Resources, Risk and Safety Services, 2012
http://safety.ucanr.edu/files/152250.pdf
-Brown, Matthews, & Pickel, 2017 https://dchas.org/2017/09/13/catching-up-with-runaway-hot-plates/
-University of Illinois Division of Research Safety, 2014)
https://www.drs.illinois.edu/News/Warning-about-malfunctioning-hotplates
-University of California - Office of the President, 2011
http://ehs.ucr.edu/laboratory/hotplatesafetyadvisory20110715.pdf
-University of Pennsylvania EHRS, n.d.
http://www.ehrs.upenn.edu/programs/labsafety/alerts/hot_plate_malfunction.html

Revision Date: N/A

THE FOLLOWING IS A LIST OF STIRRING HOT PLATES THAT HAVE BEEN REFERENCED BY INSITUTIONS AS HAVING REPORTED INCIDENTS				
Brand	**Model**	**Spontaneous Heating**	**Runaway Heating**	**Notes**
Corning	PC-35	X		No temperature feedback.
	PC-351	X		No temperature feedback.
	PC-200		X	"Off" does not disconnect power from heating element.
	PC-220		X	"Off" does not disconnect power from heating element.
	PC-320	X		
	PC-400D	X		
	PC-420	X	X	"Off" does not disconnect power from heating element.
	PC-420D	X	X	"Off" does not disconnect power from heating element.
VWR	7X7 Aluminum Top(no model # provided)	X		
Fisher	Isotemp 11-600-49H/ 11-700-49H			"Off" does not disconnect power from heating element.
Troemner	97042-714 Professional 97042-642 Advanced			MIT electronics tech evaluated 2 models of Troemner hot plates and found safety hazards based on the design and manufacturing practices.
Chemglas	Optimag-St CG-1994-10 & -50/ CG-1993-T-50	X		MIT electronics tech verified that this model heated to 300 within a min even though it was off.
IKA			X	Errors out easily; prone to overshoot when heating.
Cimarec**	SP46925	X		No temperature feedback
	H-4954.xx		X	
	**Sold under Thermolyne, Barnstead/Thermolyne, and Fisher names depending on age.			

Chart created from info on MIT Unsafe Hot Plate Webpage: https://ehs.mit.edu/site/laboratory-safety/unsafe-hot-plates