

SAFETY ALERT

Dangers of: Hot Plates



Incident

Fires and explosions have occurred because a hot plate overheated the contents.

How did this happen?

The temperature controls on the hot plate were incorrect, due to unintended errors.
(Temperature probe knocked out of solution, knobs bumped, temperature changed instead of stir rate etc)

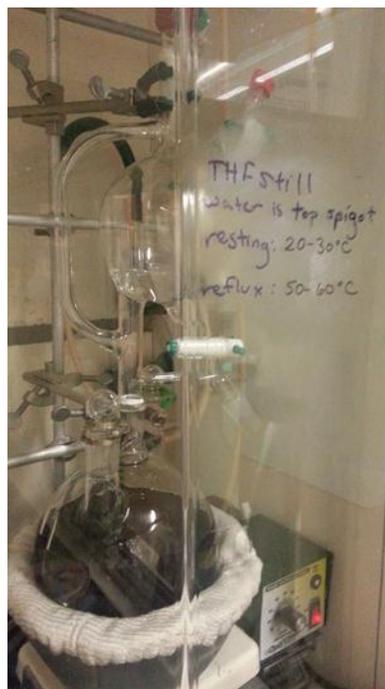
Hot plate auto-shut off factory setting: 360 °C - 550 °C >> oil bath flash point 180-320 °C

What is being done to address this risk?

Safety Alerts sent out to researchers to make them aware of equipment and procedures to help control these risks.

Action for Researchers and Laboratory workers?

1. Verify that the flash point of your media is much greater than your intended operating temperature.
2. **Select “Safety” models- capable of setting a Safe Temperature Limit (STL) which provides overheat protection.** Manufacturers refer to as “ Over-temperature protection system”, or “adjustable safety circuit” of heating plate temperature. Example: [RCT basic IKAMAG® safety control](#) STL Range: > 50 – 360 °C, Factory setting: 360 °C,
 - Set temperature *“The safe temperature limit must always be set at least 25 °C lower than the flash point of the media to be processed!”*:
 - at least 10 °C < STL,
 - STL + 25 °C < flash point,



3. Indicate intended temperature
4. Set the hot plate on a lab jack, and secure your lab ware separately so the heat source can be quickly removed without touching an overheated container.
5. Make sure electrical connections are tight, and cables are not in excessive tension.
6. After setting temperature check back periodically to verify a stable temperature is achieved.
7. **Before raising sash, check all oil bath temperature readings and reactor contents to ensure its safe to enter space.**
8. Turn stirring and heat off when not in use.

If you have questions regarding this alert please contact Joe Klancher, DEHS, at 626-3611.