

Safety Alert - February 2022

Exploding bottle

UNSW Safety is issuing a Safety Alert to remind all lab users about the risk of bottles exploding or cracking when they are heated in a microwave oven.

Background:

An incident occurred in which a 500 mL Schott bottle of solidified agar media was microwaved in an attempt to remove the lid. The lid had become stuck and was not able to be removed.

After removing the bottle from the microwave and returning it to the bench, less than a minute later the bottle exploded, and fragments of glass and hot media were forcefully ejected. One of the glass fragments struck and shattered a glass panel in the lab several metres away (see adjacent image), and the person sustained minor burns to their forearm and chest through the lab gown.

The investigation identified that:

- The lab user had decided to microwave a sealed bottle
- The RMF had not identified the risk of bottles breaking or exploding when heated or under pressure
- The SWP did not describe how to remove lids that had become difficult to remove
- The user was wearing a lab gown and gloves but not wearing safety glasses at the time
- The lab user was working alone after-hours (with approval)

Actions taken following the incident:

- The lab user applied first aid to their burns and cleared up the debris then notified the supervisor

Note: This incident was reportable to SafeWork NSW, and the incident scene should not have been disturbed until it had been released by SafeWork



- The glass panel was replaced with a temporary panel by Estate Management to make the area safe
- All Schott bottles in the lab were checked for any signs of damage and several were found to have cracks or were damaged. These were removed from circulation
- Signage was placed on microwaves advising not to microwave sealed bottles
- The SWP was updated to include how to remove lids that are stuck or difficult to remove
- The RMF was updated to include the risk of bottles exploding during or after microwaving and not to microwave sealed bottles
- The lab user's after-hours access was revoked
- The incident was reported to SafeWork NSW as a 'dangerous incident'
- All staff will be required to read and declare the updated SWP and RMF as read
- Rubber grippers have been purchased to assist with the removal of tight lids
- The school will review their current use of safety glasses and prepare a local policy on their use

What is recommended going forward:

- Sealed bottles must never be microwaved, and this should be stated in the SWP
- Bottles to be used in microwaves must be rated as microwave safe
- Where bottles are being heated in microwaves, the risk of bottle explosion or breakage should be identified in the RMF and controls noted in the SWP
- Controls such as rubber grippers to help remove lids or vented caps should be considered where this risk exists
- Bottles should be inspected before each use and if any signs of damage can be seen, they should be removed from use and disposed of appropriately
- If a serious or dangerous incident occurs in your area, contact your supervisor and the [Safety team](#) immediately for advice
- If you think it might be a serious injury or illness or dangerous incident, **don't disturb the incident scene** (unless you need to provide first aid to someone or prevent others from getting hurt)
- For more information on how to report an incident see the UNSW [Hazard & Incident Reporting Procedure](#)
- More information on when incidents should be reported to SafeWork NSW can be found in this [Safe Work Australia Incident Notification Information Sheet](#)
- The Safety team will liaise with SafeWork NSW in reference to notifiable incidents



Further Information: safety@unsw.edu.au



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