

Hazard statements

H301+H331 Toxic if swallowed or if inhaled

Precautionary statements

P260 Do not breathe vapor/ spray.

P264 Wash contaminated skin thoroughly after handling.

P301+P310 If swallowed: Immediately call a poison center/ doctor.

P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.

P311 Call a poison center/ doctor.

P314 Get medical advice/ attention if you feel unwell.

The process with risk of being exposed to target

1. Deposition

The Sb₂Te₃ target is used for AJA sputtering to deposit the phase change material film, usually deposited under general power (around 100w) and high temperature (around 200 degree). GeTe target and Sb₂Te₃ target may enable at the same time. The process is carried out inside a vacuum chamber and there is no chance of exposure to this material for the user. (The coated sample will present a thin layer of deposited material on the surface.) Do not unload the carrier until the chamber temperature decreases to the room temperature.

2. Target replacement

The replacement of Sb₂Te₃ target requires opening the AJA sputtering chamber and install the target. People performing the target changes will directly contact with the target and any metal dust that remains on the wall of chamber in this process. To ensure staffs' safety, the following of the instruction of SOP is necessary.

Standard Operation Procedure for target changes

- a. Carry out a dummy deposition of metal (Al or Mo are suggested) (~20min) to coat the chamber walls. The wafer holder should be installed during this dummy deposition to prevent the Al coating on the heater cover quartz. This precaution is intended to encapsulate any deposited Sb₂Te₃ material and immobilize possible dust and particles.
- b. Avoid any skin or eyes contact with target.
- c. Loading and unloading must be taken under room temperature to avoid possible volatiles.
- d. Required Safety **Equipment**
 - a. The staff must wear safety glasses (goggles)
 - b. The staff must wear safety clothing – clean room coveralls.
 - c. The staff must wear gloves
 - d. The staff must wear mask to prevent inhalation of particles, flakes or dust.
 - e. The staff may use tools to avoid contact (tweezers, etc.)

f. The clean for chamber should be executed by using the high efficiency particulate vacuum cleaner equipped with absolute (HEPA) air filter (asbestos rating vacuum cleaner dedicated to this work in the clean room.)