

UNIVERSITY OF VICTORIA
Occupational Health, Safety and Environment

Chemical Safety – Special Hazards

Safe Work Procedure (SWP – 003)

Aqua Regia

Last revised: January 28, 2022

REVISION HISTORY

	Revision Date	Author	Position
1.	May 13, 2021	Vivian Lagaditis	OHSE consultant
2.	January 28, 2022	Paraskevi Lagaditis	OHSE consultant

DOCUMENT APPROVAL

Approved by: Laboratory Safety Committee

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Chair, Laboratory Safety Committee

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*This revision replaces all previous versions of this document. If a copy is printed, it is the users' responsibility to verify the copy is the most current version of the document.



PURPOSE

To provide guidance and instruction of the safe preparation and use of Aqua Regia in laboratories. In

- ii. Slowly neutralize using an acid spill kit (Spill X-A, sodium bicarbonate, or equivalent) from outside of the spill inward.
 - iii. Wait for 15 minutes
 - iv. Test with pH paper until the spilled material is within the neutral range of pH 6-8.
 - v. Scoop the absorbed neutralized material into an appropriately sized plastic (polyethylene or polypropylene) container.
 - vi. Wipe up any residue with a moist paper towel or rag
 - vii. Soak the area with detergent, then rinse with water.
 - viii. Collect and label all materials used in the clean-up for disposal through the hazardous waste system indicating the material is "Neutralized Aqua Regia spill absorbent and debris"
 - b. Complete a [Department Incident & Investigation Report](#) to document and review the spill incident.
4. Decontamination
 - a. Pre-rinse containers and lab ware with water to collect any residual Aqua Regia and collect pre-rinse washing for hazardous waste disposal (strongly acidic).
 - i. Completely rinse with copious amounts of water in a sink after pre-rinse.
5. First Aid and Emergencies
 - a. Call 911 to summon an ambulance if there is a medical emergency.
 - b. Call Campus Security at 250-721-7599 for first aid.
 - c. If material has contacted the eyes, use emergency eyewash and flush for at least 15-20 minutes.
 - d. For skin contact, flush affected area with running water for at least 15-20 minutes.
 - e. For inhalation, move immediately to fresh air; seek medical attention in the event of respiratory irritation, cough or tightness in the chest.
6. Waste Disposal
 - a. Transfer used or unused Aqua Regia into a dedicated user supplied container with a venting cap in a fume hood for several hours (overnight) before disposal as waste.
 - b. Do not mix Aqua Regia waste with other waste.
 - c. If neutralizing Aqua Regia as neutral waste disposal, use a weak base (such as sodium bicarbonate).
 - i. In a fume hood, dilute Aqua Regia by pouring into a beaker with water (use an ice bath or ice water)
 - ii. Slowly add sodium bicarbonate while mixing and allow gas release to cease
 - iii. Test the pH and repeat addition of sodium bicarbonate until solution is no longer acidic and there is an excess of sodium bicarbonate.
 - iv. Allow the solution to sit for a prolonged time until gas release has overall ceased
 - v. Collect the neutralized solution in a separate hazardous waste bottle since it will be contaminated with the metals; ensure bottle is no more than 75% full
 - vi. Do not pour neutralized Aqua Regia down the sink.
 - vii. Neutralized Aqua Regia must be return into a dedicated user supplied bottle. Do not pour neutralized Aqua Regia into the aqueous neutral waste container provided by OHSE.

