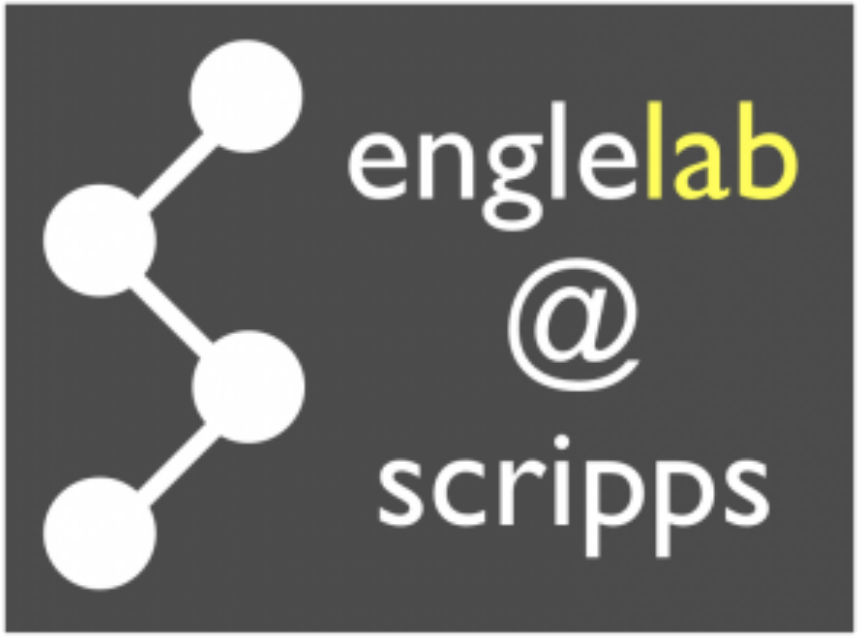

Safety Minute:

Handling Aqua Regia

Engle Lab Group Meeting

6/15/17

Presenter: Joe Derosa

Aqua Regia

Aqua regia is a mixture of concentrated nitric acid and hydrochloric acid that is modernly used to clean glassware or stir bars from metal salt residue.

Preparation (try to limit the amount to 150 mL!)

Mix 1 part nitric acid with 3 parts hydrochloric acid.

1. ***In fume hood*** add HNO_3 to a glass container that is at least 2x the volume of *aqua regia* you intend to prepare.
2. ***In fume hood*** slowly add HCl and swirl gently to mix.
3. ***In fume hood*** gently add stir bars to flask to avoid splashing.

Waste Disposal *(Dilution and Neutralization):*

1. Acquire a secondary container for the *aqua regia* waste that is properly cleaned and free from organic chemicals/solvents.
2. Dilute spent *aqua regia* by **slowly** adding it to 7.5x volume of water. Stir the solution on a stir plate as you continue adding.
3. Neutralize slowly with saturated sodium bicarbonate solution (endpoint at pH 6-8).
4. Let solution cool to room temperature and dispose of accordingly.

Safety Notes:

- **NEVER** handle *aqua regia* outside of the hood
- **Do NOT** cap or seal off a container bearing *aqua regia*
- **ALWAYS** wear full PPE – safety goggles, lab coat, gloves, etc.
- **DO NOT** mix with organics!