



# PRELIMINARY WORK: FILM SPIKING

# TERMS

- GLY            glycerol
- DBP           dibutyl phthalate
- EG<sub>4</sub>           tetraethylene glycol
- EG<sub>5</sub>           pentaethylene glycol
- Film            EcoVAE 401

# PURPOSE

- Additional work with film spiking, using a simplified resin-only matrix
- Two in-training VOC chemists
- To evaluate precision and identify critical parameters in method performance

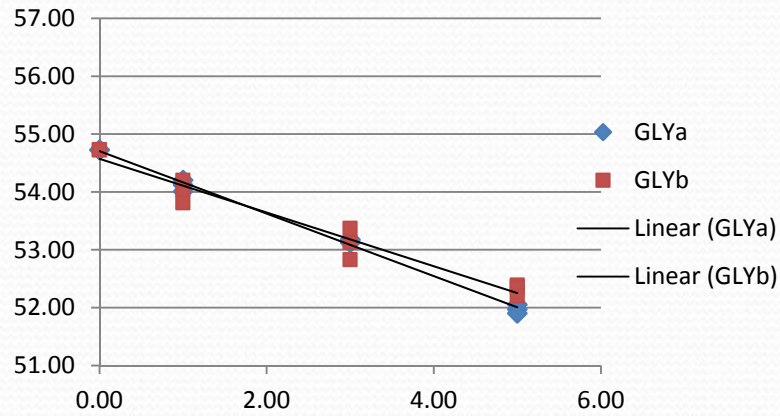


# PROCEDURE

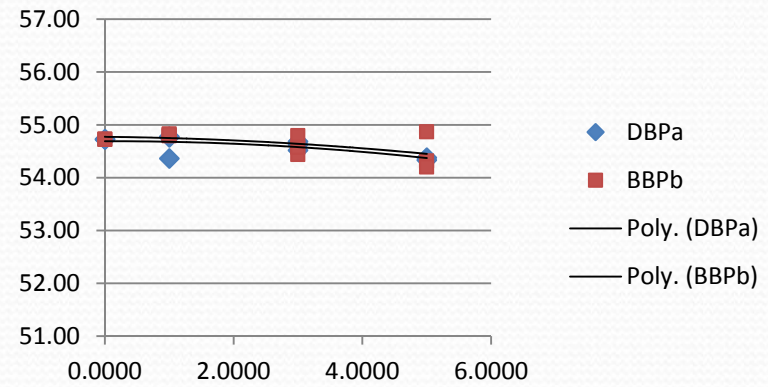
- Resin unspiked, and spiked with 1%, 3%, and 5% of test compound
- Evaporated and reweighed per M24

# RESULTS- TWO ANALYSTS

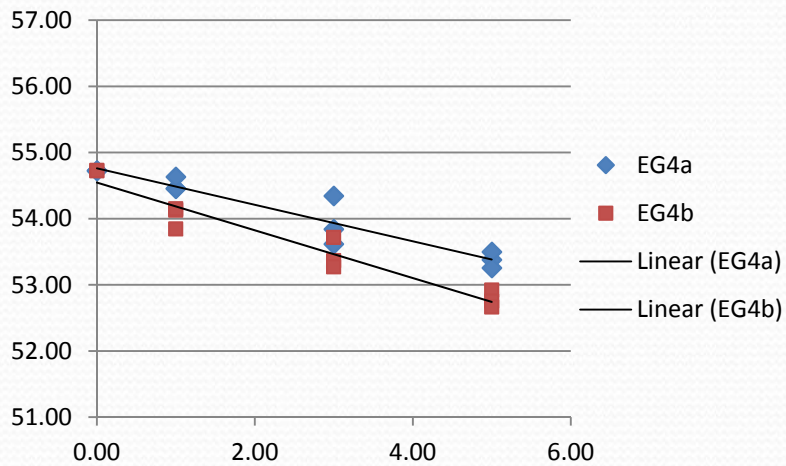
## GLY SPIKE



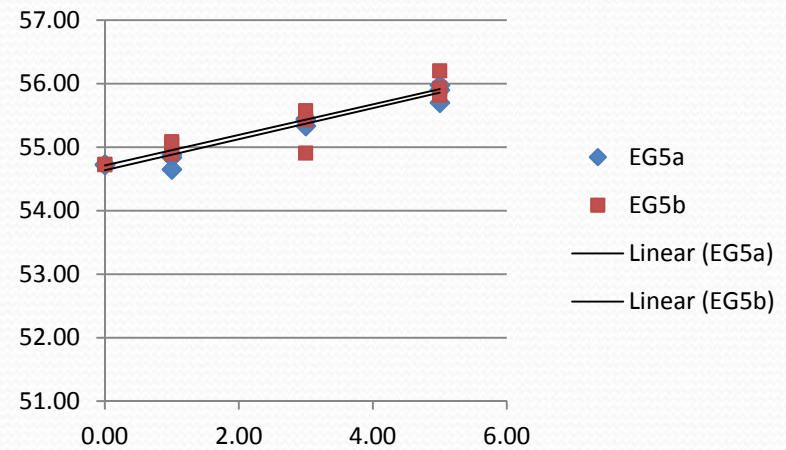
## DBP SPIKE



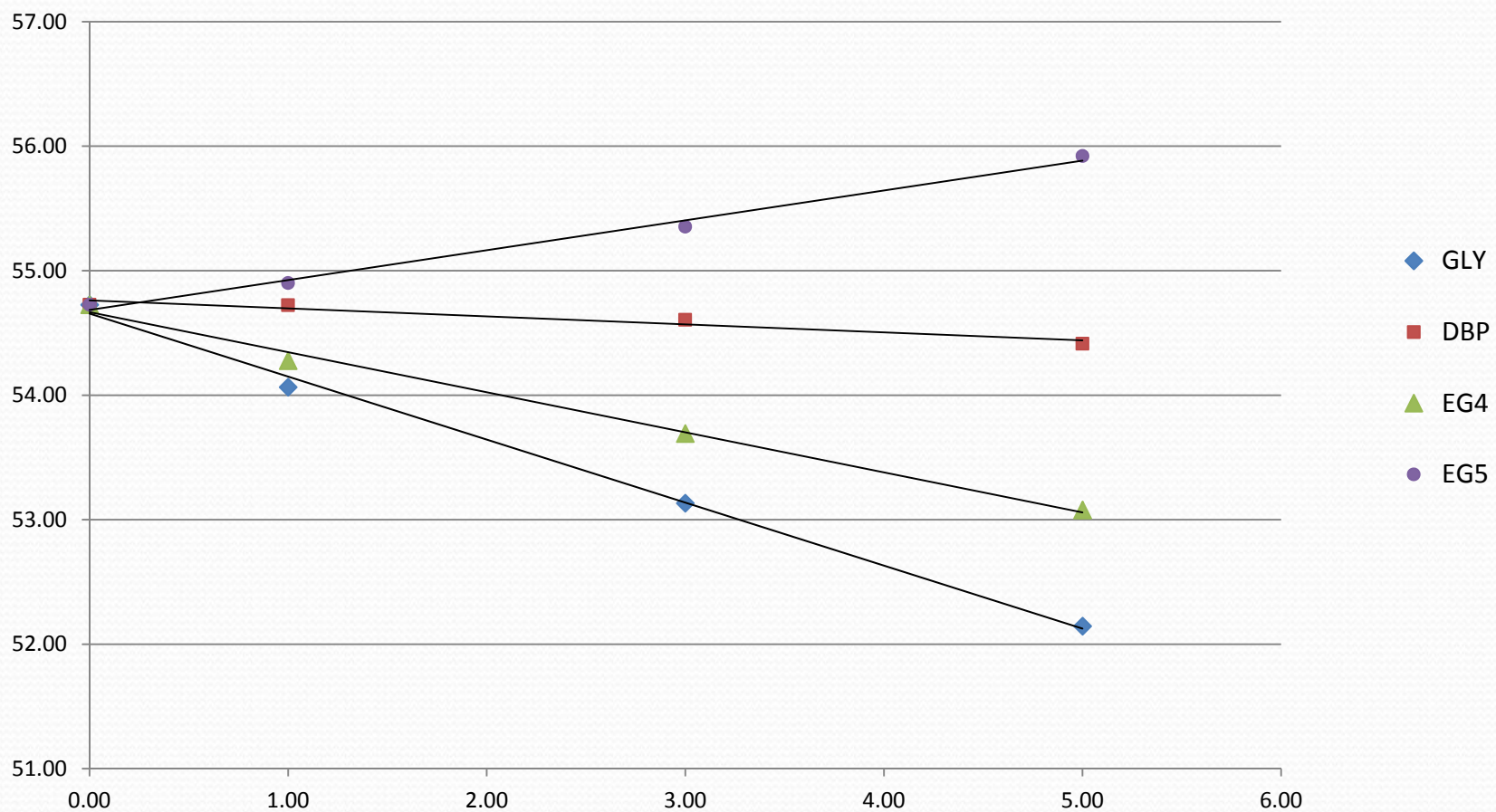
## EG4 SPIKE



## EG5 SPIKE

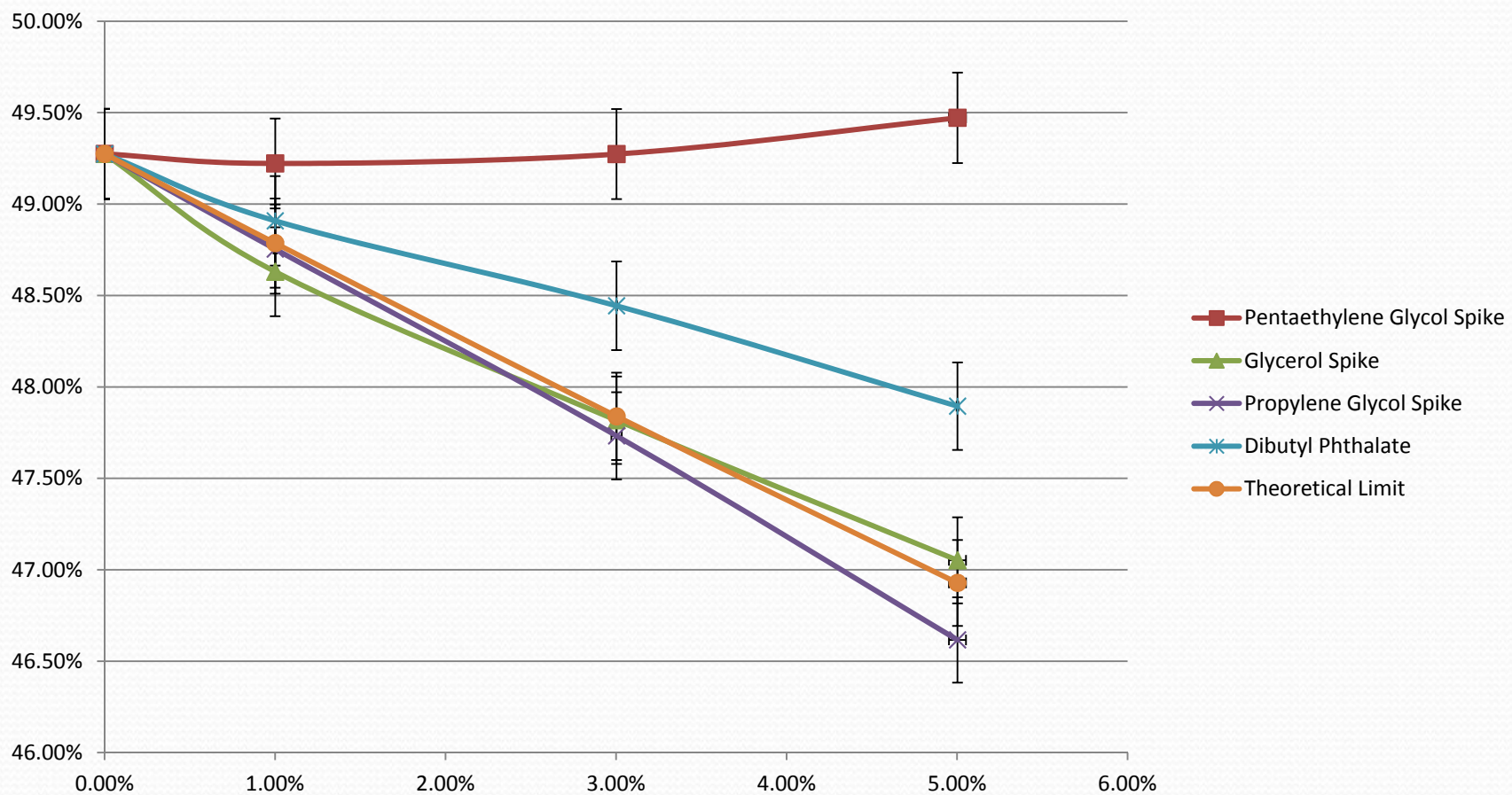


# SPIKE INTO EcoVAE

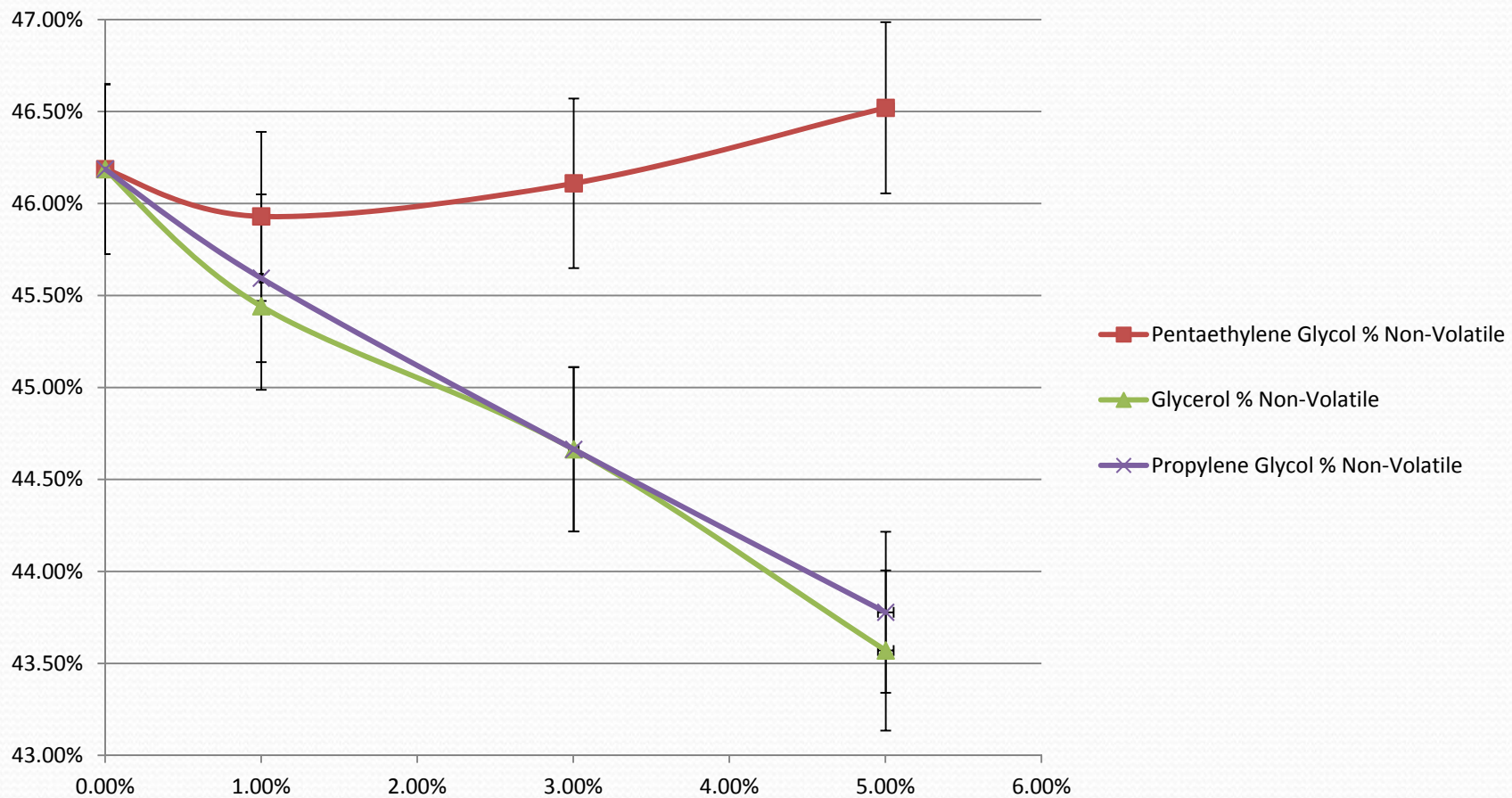




# SPIKE INTO ~50 g/L PAINT



# SPIKE INTO $\sim 0$ g/L PAINT





# CONCLUSIONS

- Spike into simplified matrix and two fully-formulated coatings yields similar order of results
- Relatively inexperienced chemists yields repeatable results (RPD  $\leq 1.5\%$ )
- Mixing is a challenge for MP
- Improvements achievable through simple procedural changes such as limiting the time between mixing and dispensing

# FURTHER WORK

- Interlaboratory testing
- Ruggedness testing possible