# The Use of CopyFlex Food-Grade Silicone Rubber for Making Impressions of Archaeological Objects

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# CopyFlex

• Food grade silicone rubber for mold making • RTV silicone rubber organopolysiloxane mixture • Low viscosity



Image: Ancient Methone Archaeological Project

# **Working Properties**

- Easy mixing ratio (1:1)
- Cures in 4-5 hours at 70°F
- Described as "nonhazardous"
  - low toxicity & low health hazard
- Reproduces very fine details
- Low cost: 1lb kit is \$25more you buy, cheaper it is



Image: Ancient Methone Archaeological Project

# **Staining tests/Barriers**

- Manufacturer doesn't mention requiring porous surfaces to be sealed
  - Based on discussions in literature and past experience using RTV silicone rubber can leave stains-silicone oil residue
- Tests would also show how CopyFlex interacted with surface of a porous ceramicdid it pull up the substrate when removed?





After applying CopyFlex

After trying to remove barrier layer with acetone

# **Case Study: Ceramic Figurine Mold**

- Ceramic mold of female face for figurine
- Found at site of ancient Methone (northern Greece) during a survey
- Likely from Archaic period- 6th c. BC
- Very rare findarchaeologists wanted impression to see face



Surface of mold cleaned mechanically to remove soil/accretions Surface sealed with O barrier-5% B-48N (2 coats)



Images: Ancient Methone Archaeological Project



Images: Ancient Methone Archaeological Project



#### Images: Ancient Methone Archaeological Project

# **Oddy Testing**

- Undertaken to see if molding material can be stored with artifacts
- Two tests conducted- off-gassing and direct contact
- Two different protocols used-Getty Conservation Institute (modified version) and Autry Center -protocols on AIC Wiki
- Tested:
  - Part A & B separately
  - o 5 and 18 hours after mixing
  - o 3 months after curing



### **Oddy Testing Results-modified GCI Protocol**

• Parts A & B-passed After 5 hours of mixing (fully cured) • Cu corroded-contact • After 18 hours of mixing • Cu corroded-contact • Trying to figure out what is causing the corrosion of Cu



## **Oddy Testing Results-Autry Protocol**

 CopyFlex brought from field-tested 3 months after curing

 Passed both offgassing and contact



# **Future Work**

- Results show no off-gassing that could impact artifacts so can be stored together
  - Due to contact test results, artifact and molding material should not be in contact with each other in storage bag/container soon after silicone cures
- Looking to conduct further contact tests after different post-curing times
  - Also want to see if test protocol is affecting results



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Since CopyFlex is food grade silicone, you can also use it to make candy versions of your artifacts!