# NISTIR 6191

# Demonstration Of Biodegradable, Environmentally Safe, Non-Toxic Fire Suppression Liquids

**Daniel Madrzykowski**
**David W. Stroup, Editors**

**July 1998**

**U.S. Department of Commerce**
**Technology Administration**
National Institute of Standards and Technology
Gaithersburg, MD 20899

*Prepared for:*
**Federal Emergency Management Agency**
U.S. Fire Administration
Emmitsburg, MD 21727-8998

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**U.S. Department of Commerce**
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Gary R. Bachula, *Under Secretary for Technology*
National Institute of Standards and Technology
Raymond G. Kammer, *Director*

*Prepared for:*
**Federal Emergency Management Agency**
James Lee Witt, *Director*
**U.S. Fire Administration**
Carrye B. Brown, *Administrator*

# APPENDIX D

# COMPUTER ACQUIRED DATA FROM MASS-RETENTION EXPERIMENTS 1-27

William J. Josler
National Institute of Standards and Technology
Building and Fire Research Laboratory
Fire Safety Engineering Division
Large Fire Research
Gaithersburg, Maryland

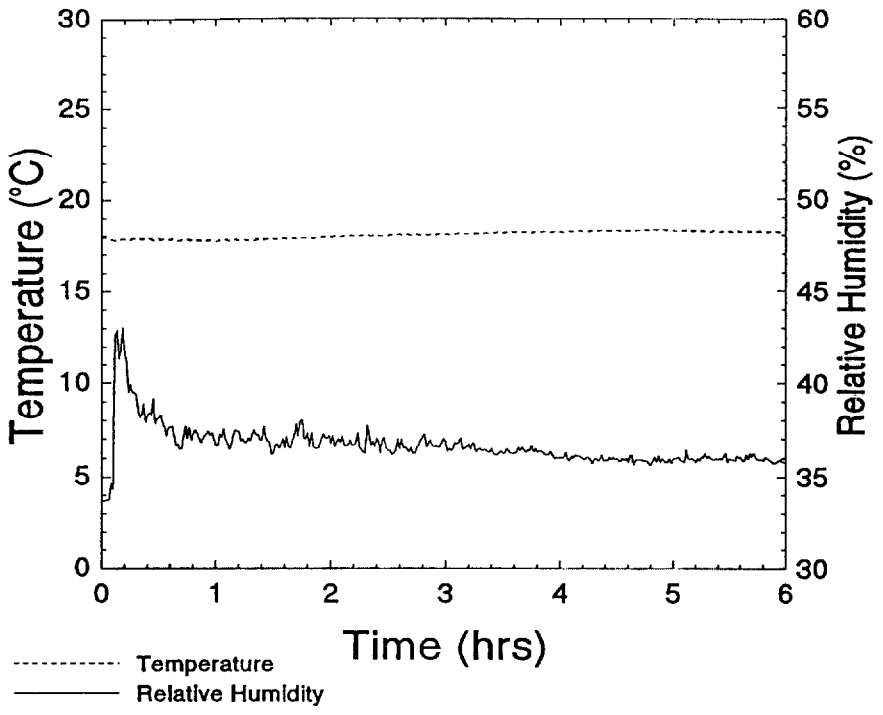


**Figure 1** - Water, experiment 1, environmental conditions

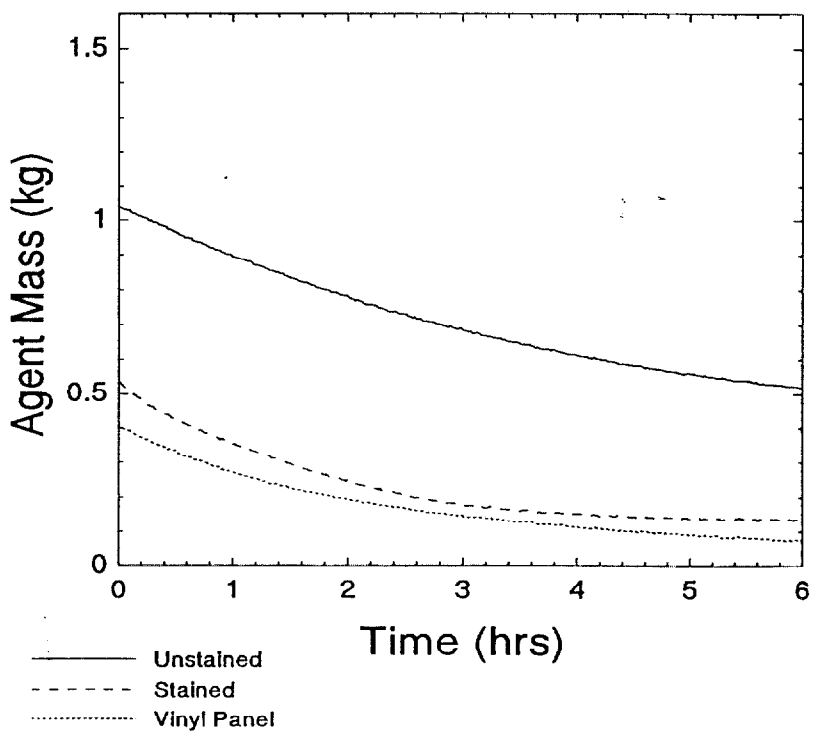


**Figure 2** - Water, experiment 1, mass retention

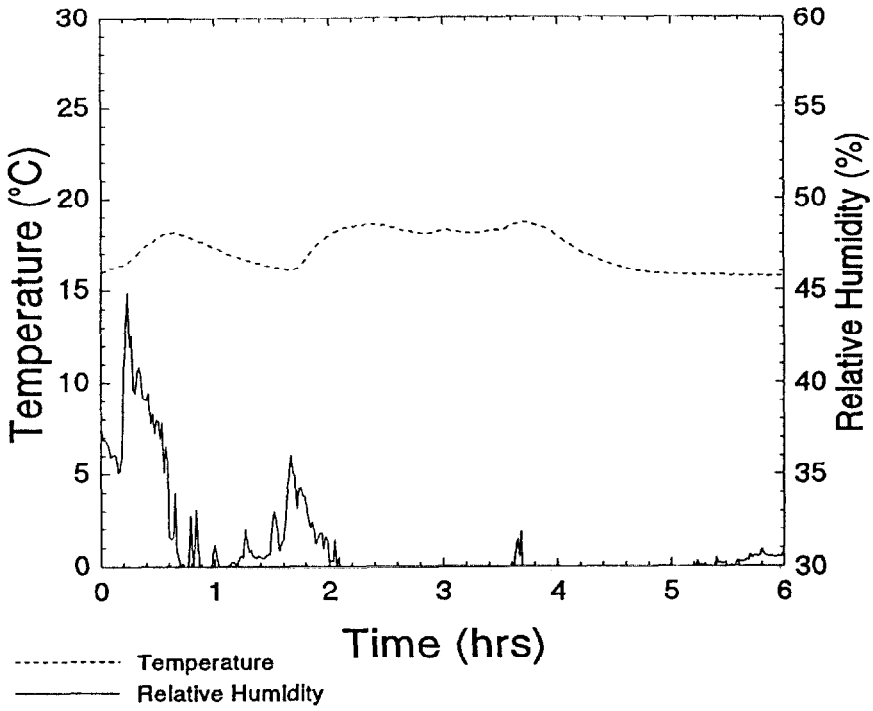


**Figure 3** - Water, experiment 2, environmental conditions

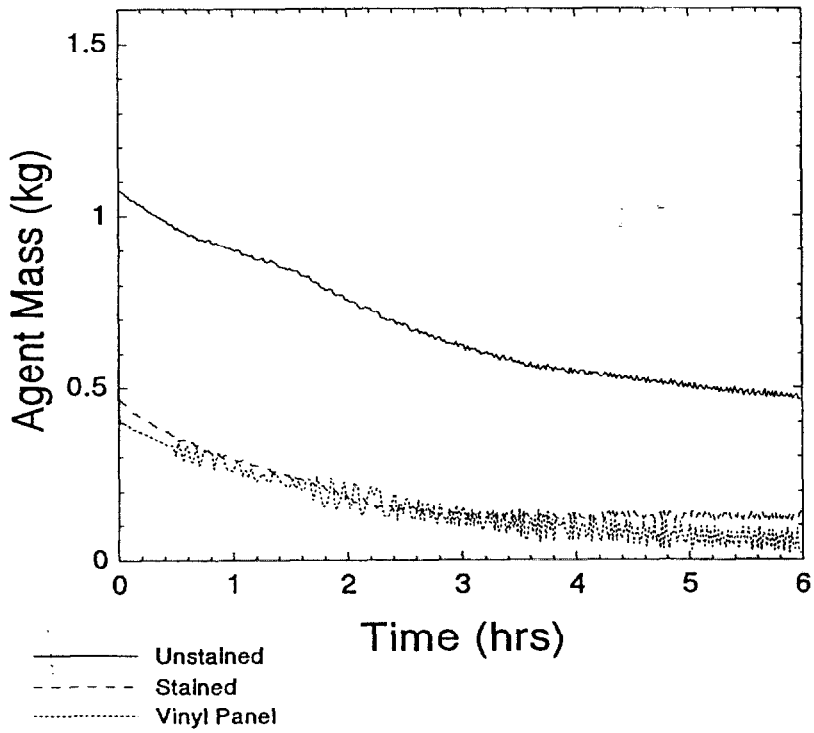


**Figure 4** - Water, experiment 2, mass retention

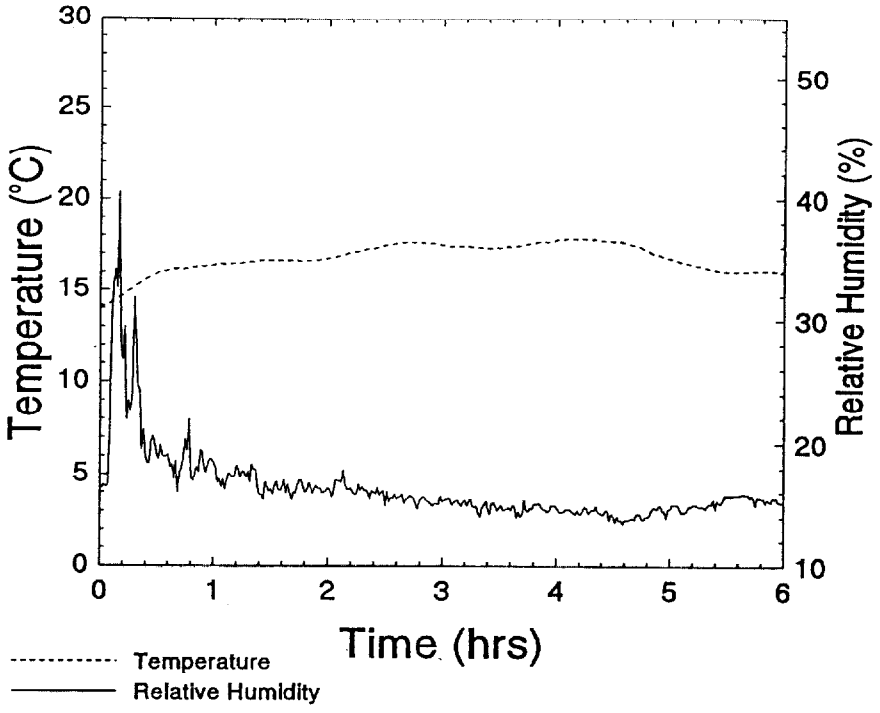


**Figure 5** - Water, experiment 3, environmental conditions

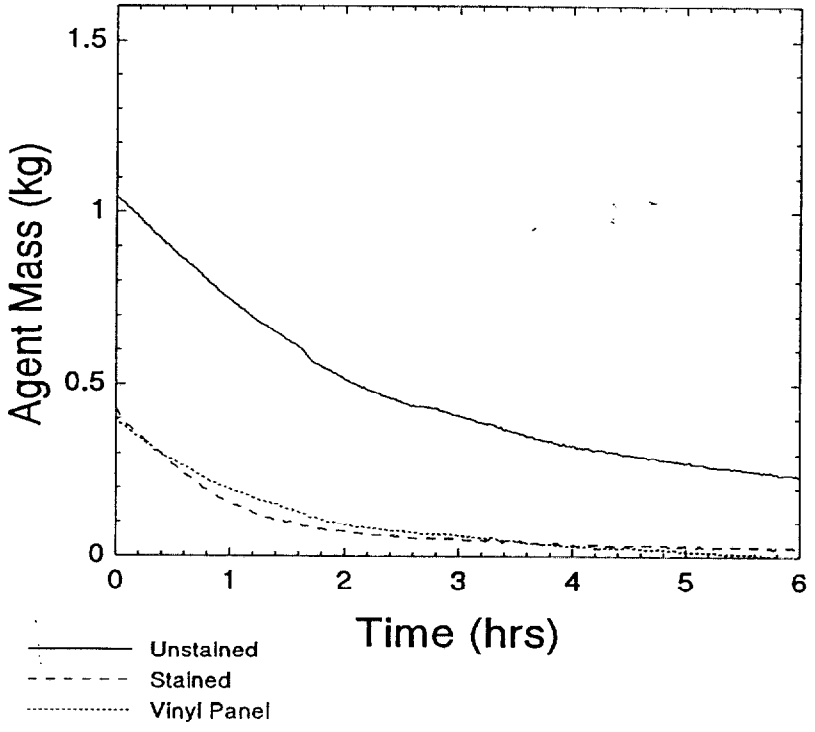


**Figure 6** - Water, experiment 3, mass retention

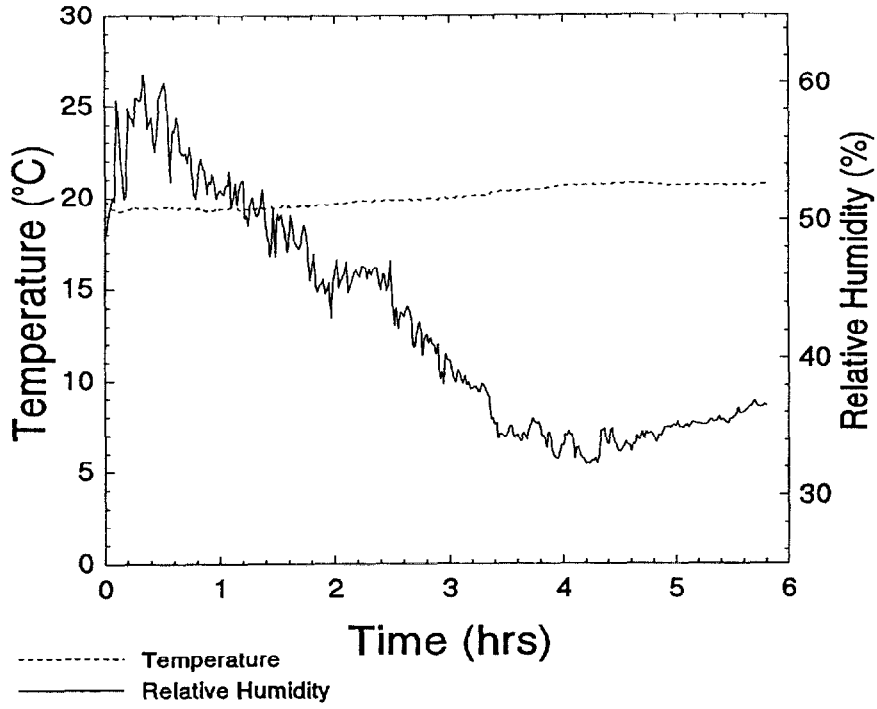


**Figure 7** - Solution A, experiment 1, environmental conditions

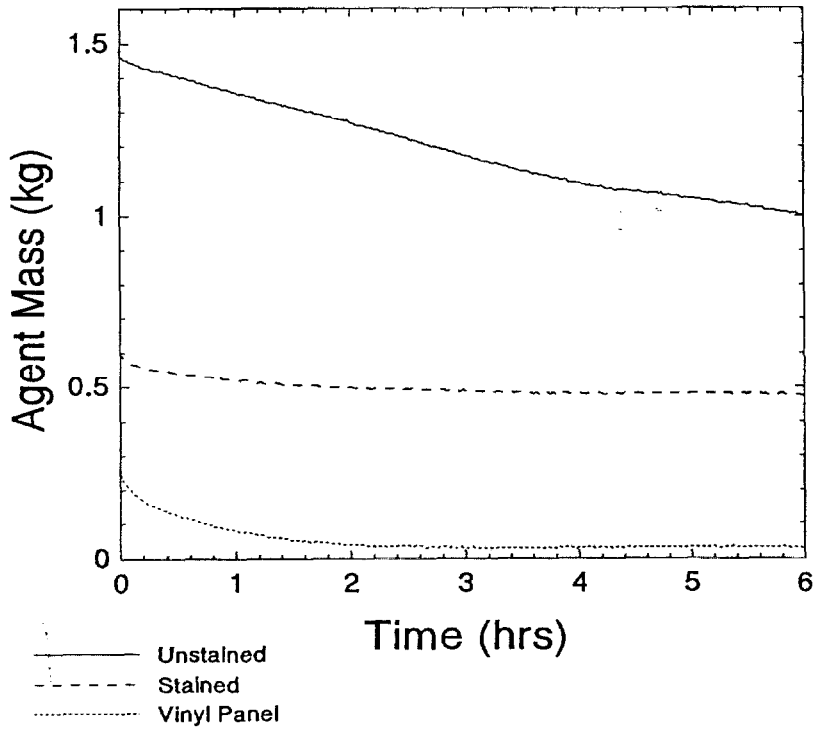


**Figure 8** - Solution A, experiment 1, mass retention

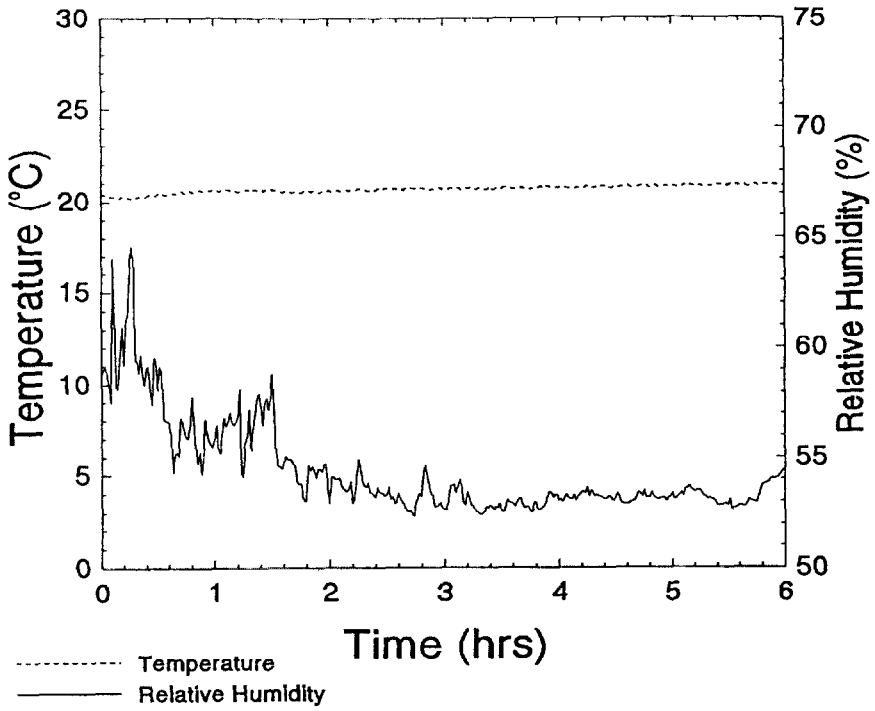


**Figure 9** - Solution A, experiment 2, environmental conditions

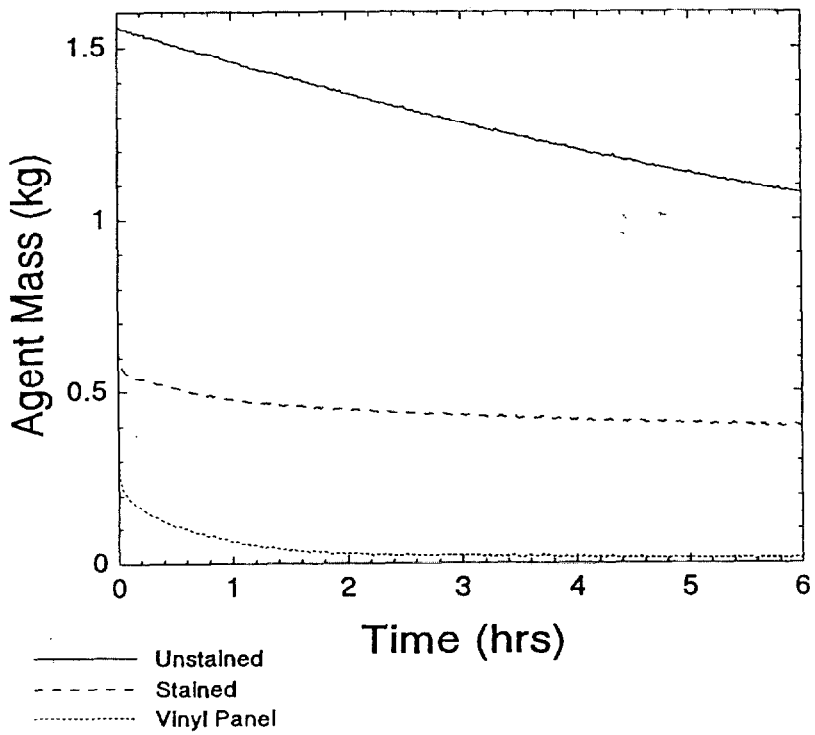


**Figure 10** - Solution A, experiment 2, mass retention

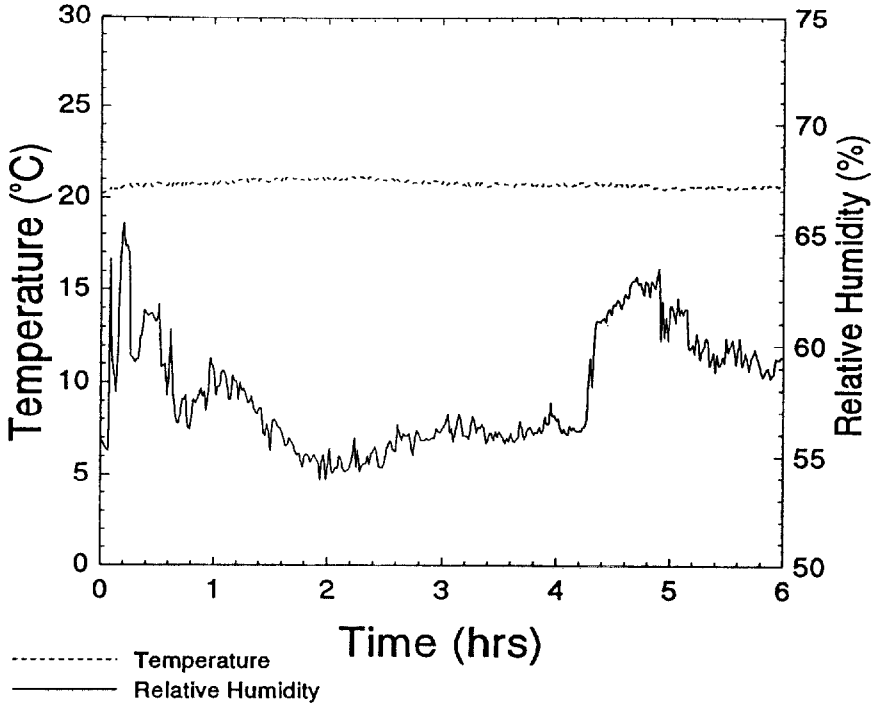


**Figure 11** - Solution A, experiment 3, environmental conditions

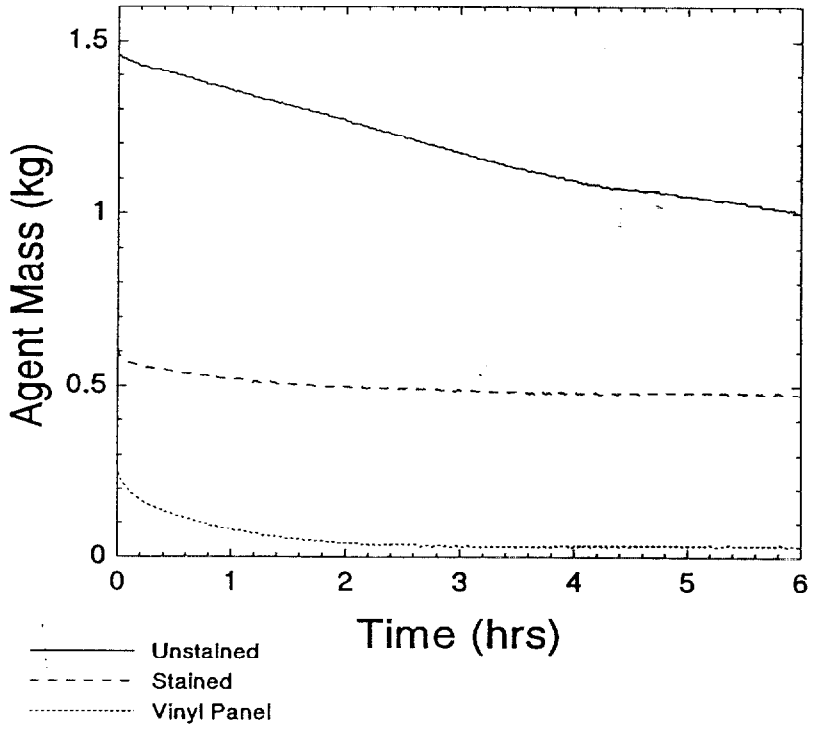


**Figure 12** - Solution A, experiment 3, mass retention

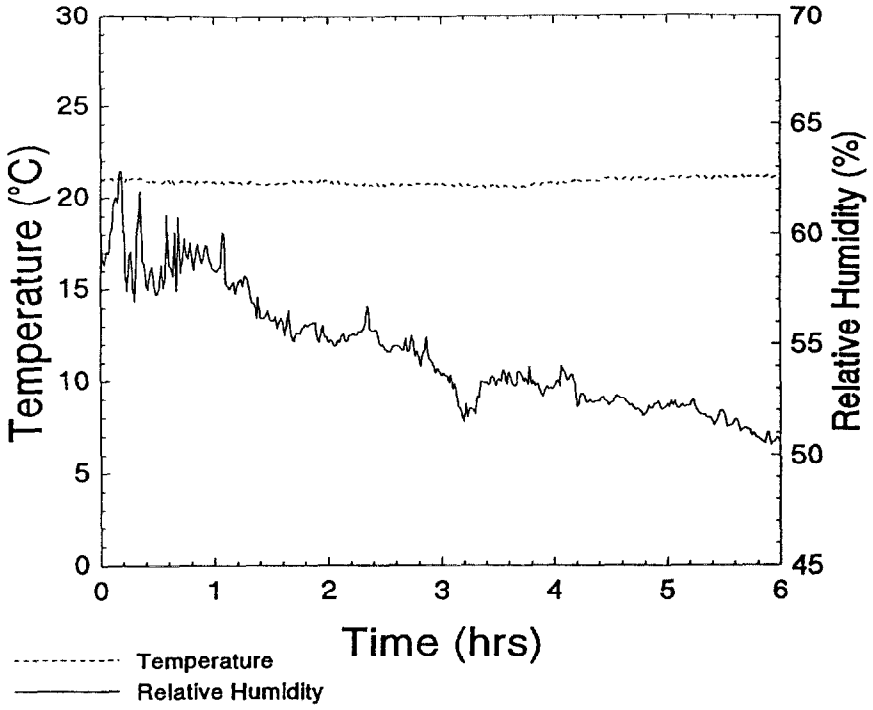


**Figure 13** - Solution B, experiment 1, environmental conditions

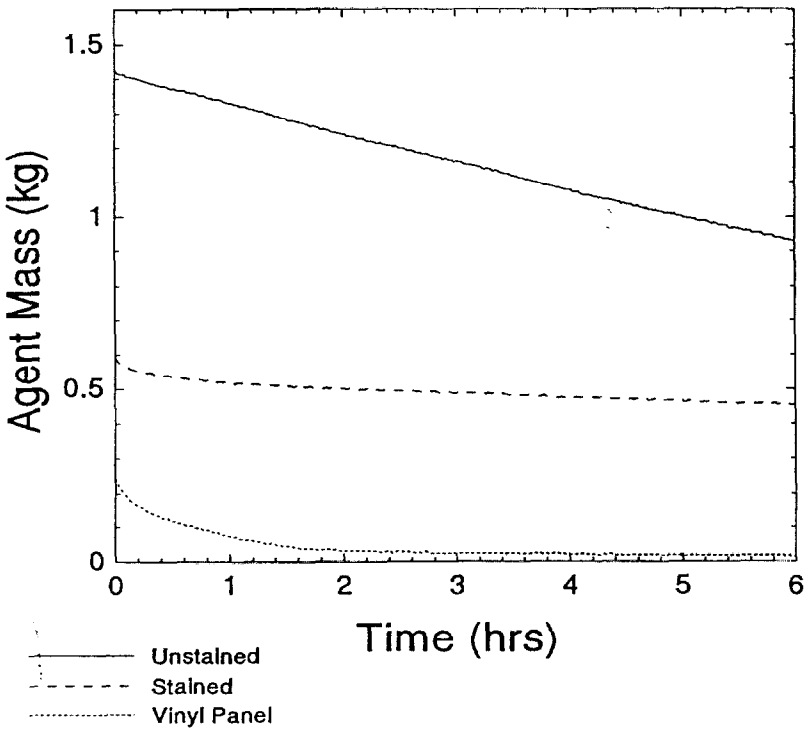


**Figure 14** - Solution B, experiment 1, mass retention

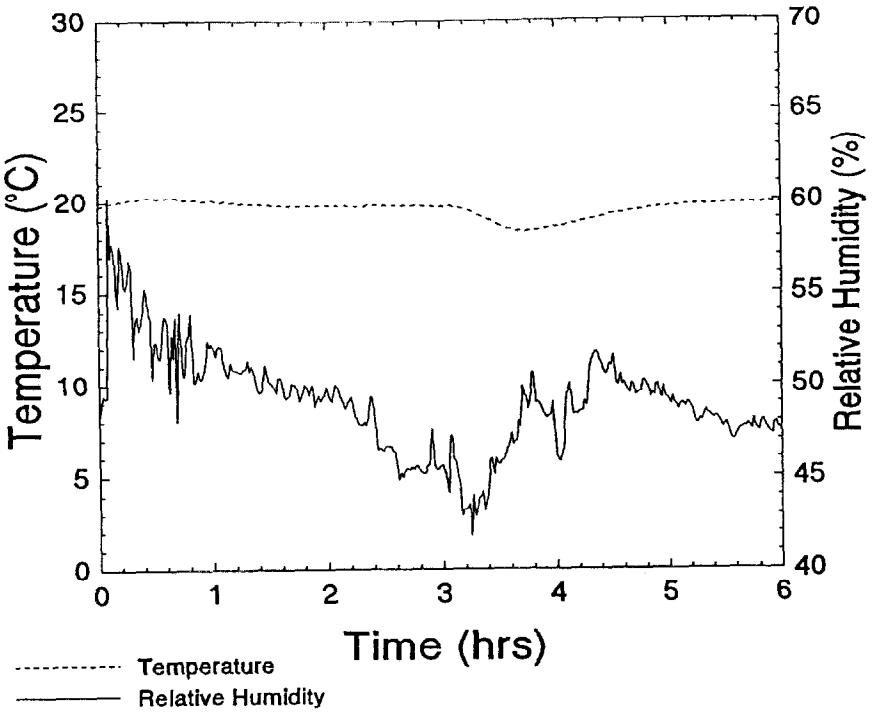


**Figure 15** - Solution B, experiment 2, environmental conditions

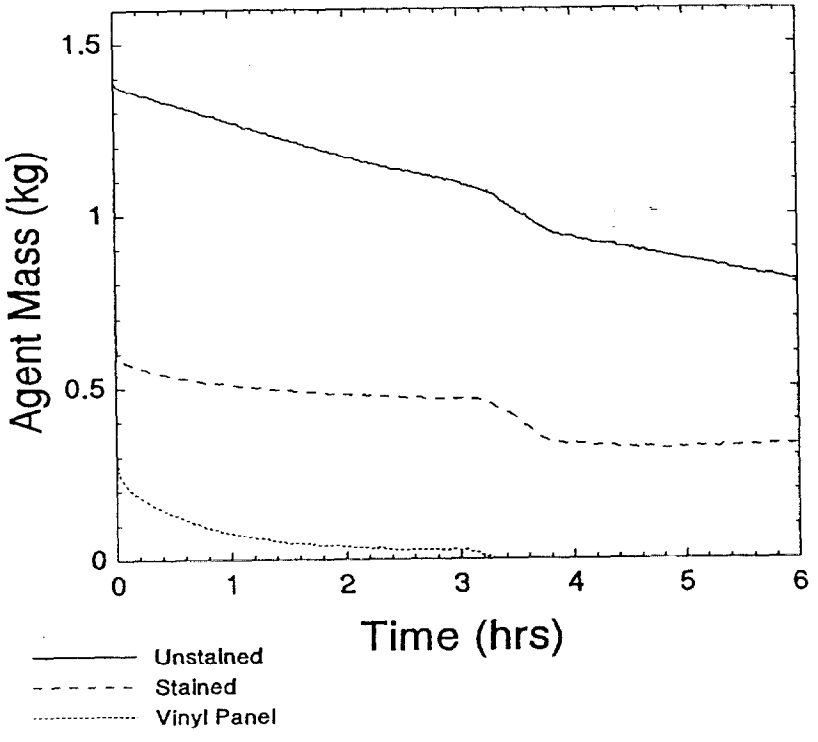


**Figure 16** - Solution B, experiment 2, mass retention

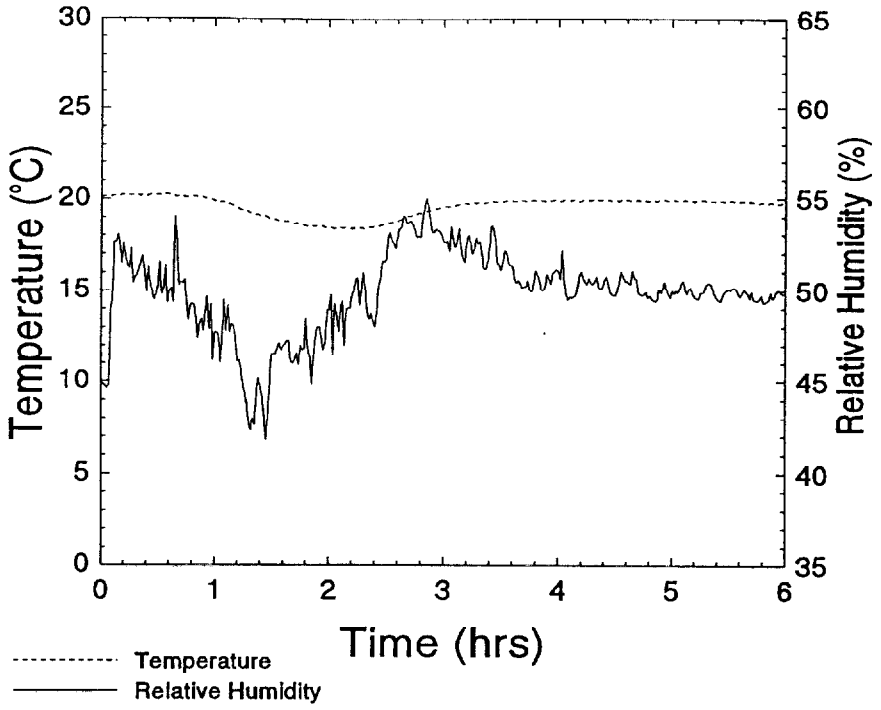


**Figure 17** - Solution B, experiment 3, environmental conditions

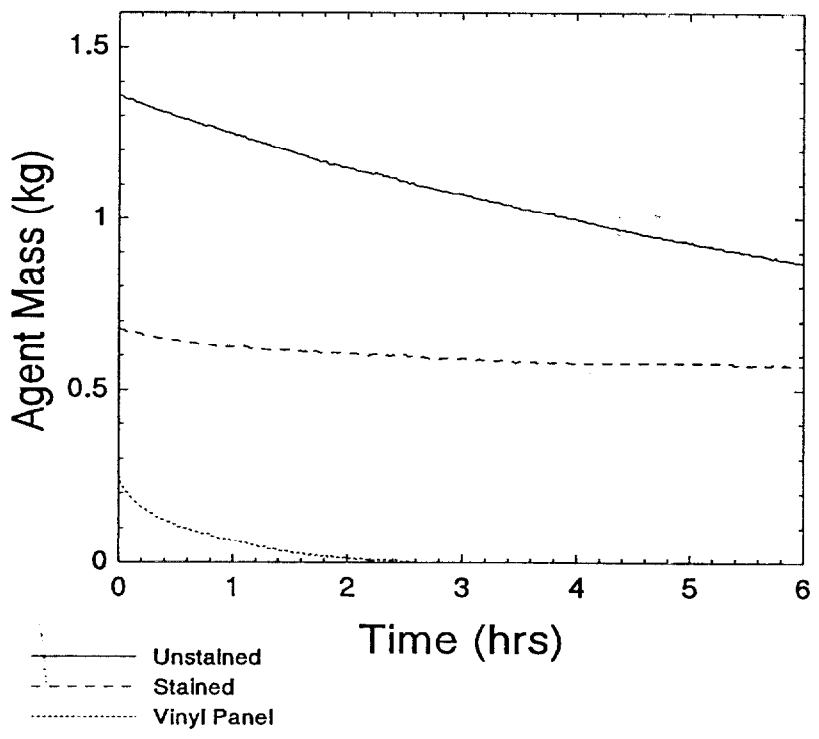


**Figure 18** - Solution B, experiment 3, mass retention

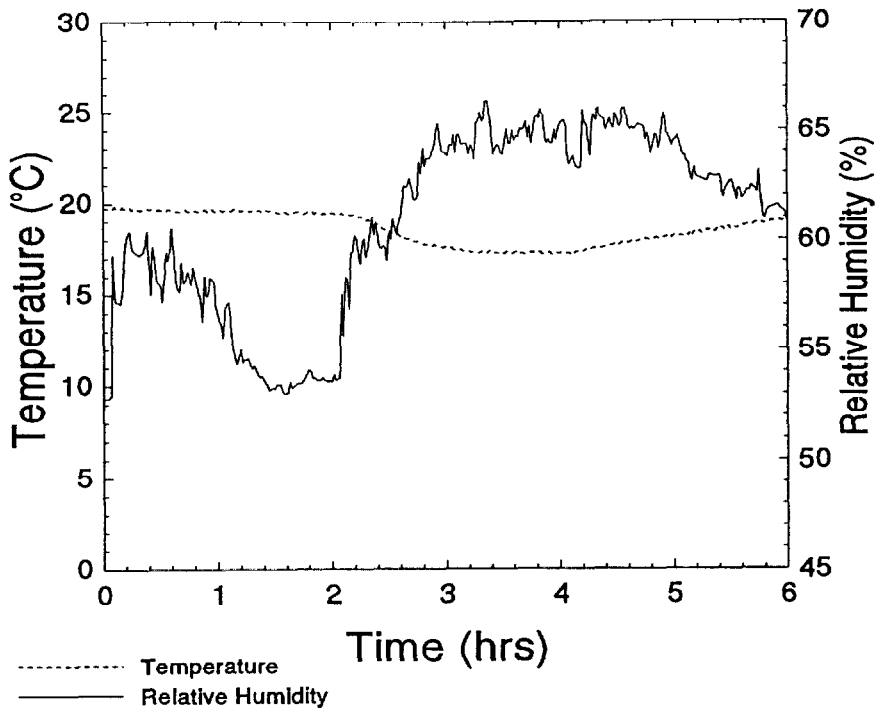


**Figure 19** - Solution C, experiment 1, environmental conditions

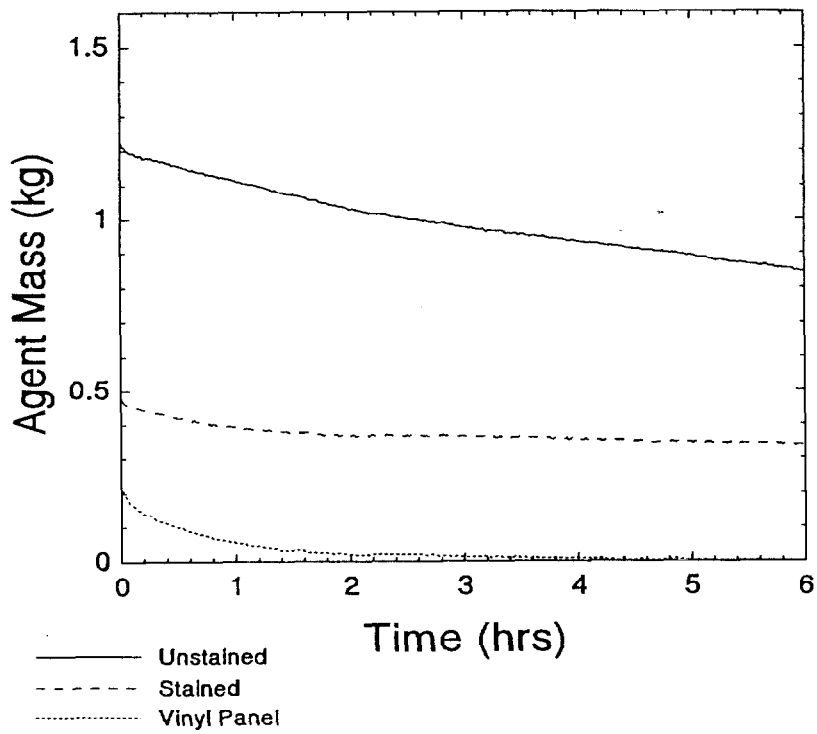


**Figure 20** - Solution C, experiment 1, mass retention

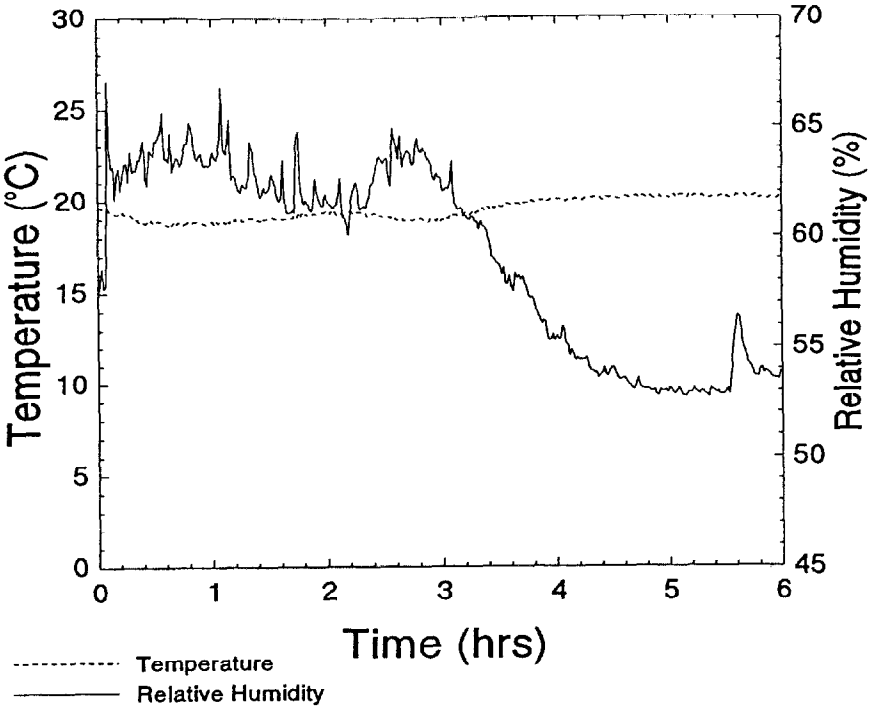


**Figure 21** - Solution C, experiment 2, environmental conditions

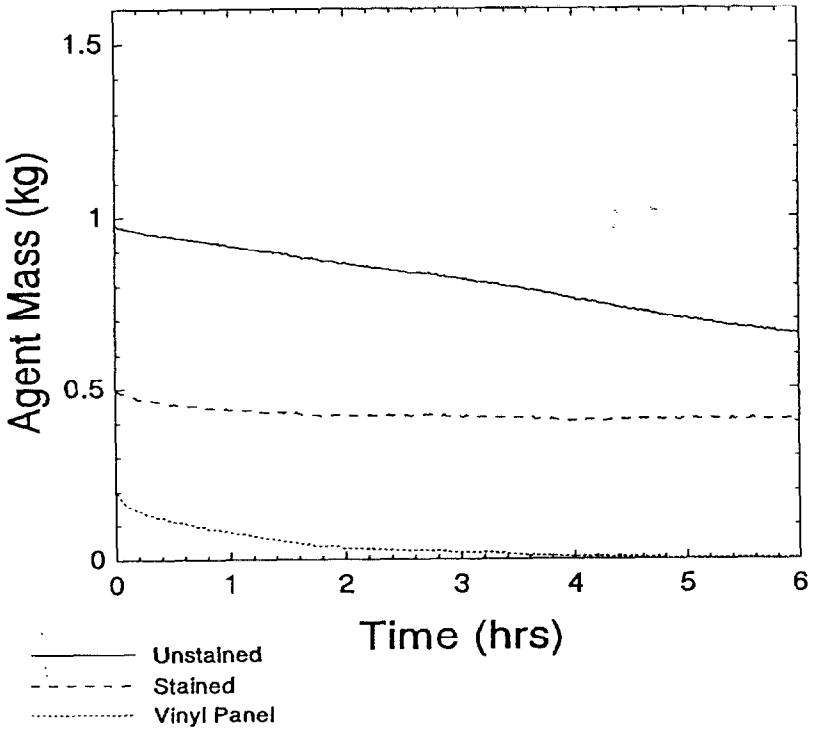


**Figure 22** - Solution C, experiment 2, mass retention

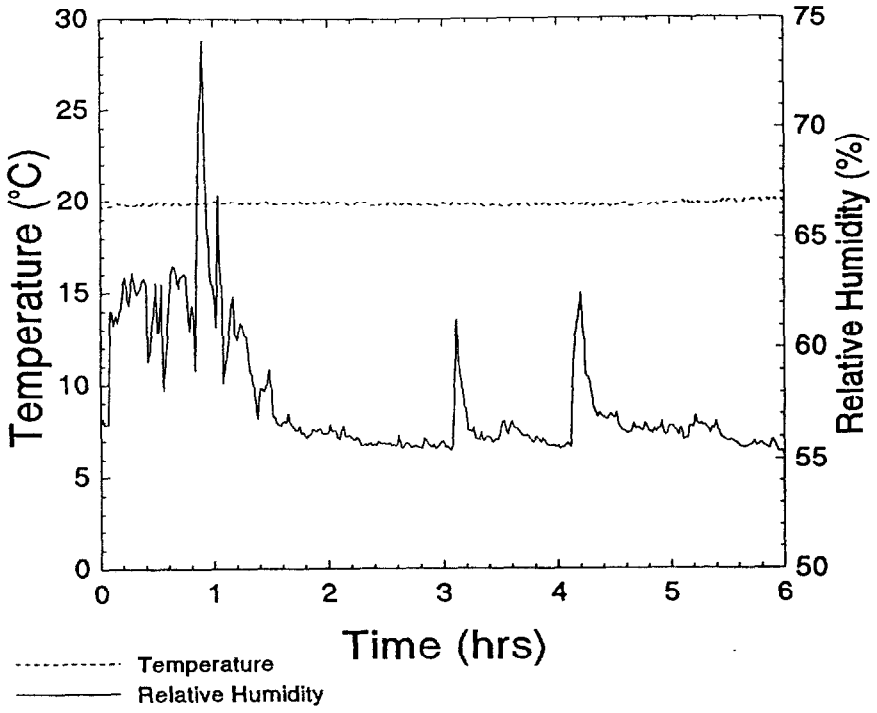


**Figure 23** - Solution C, experiment 3, environmental conditions

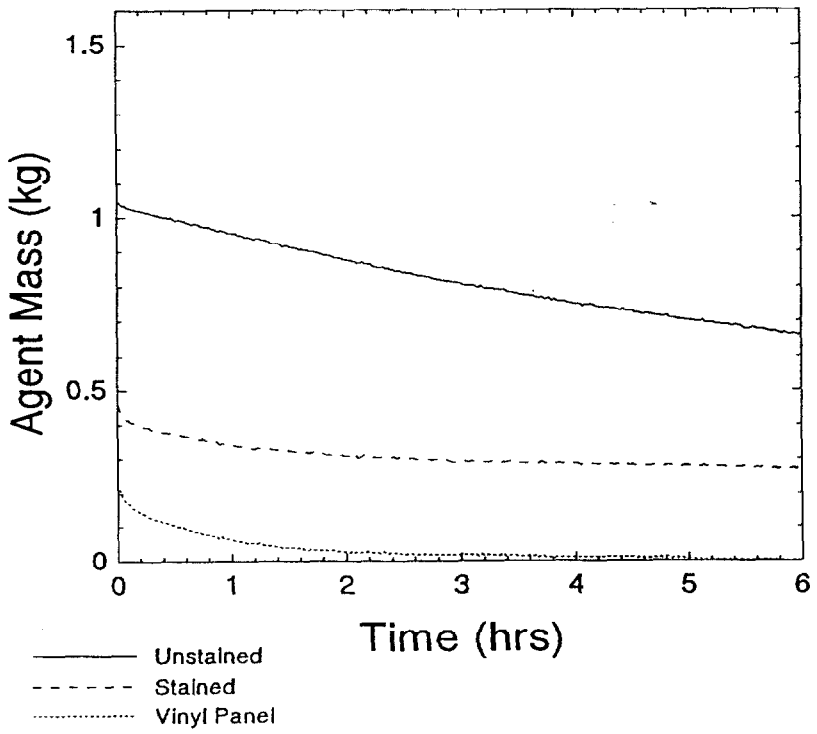


**Figure 24** - Solution C, experiment 2, mass retention

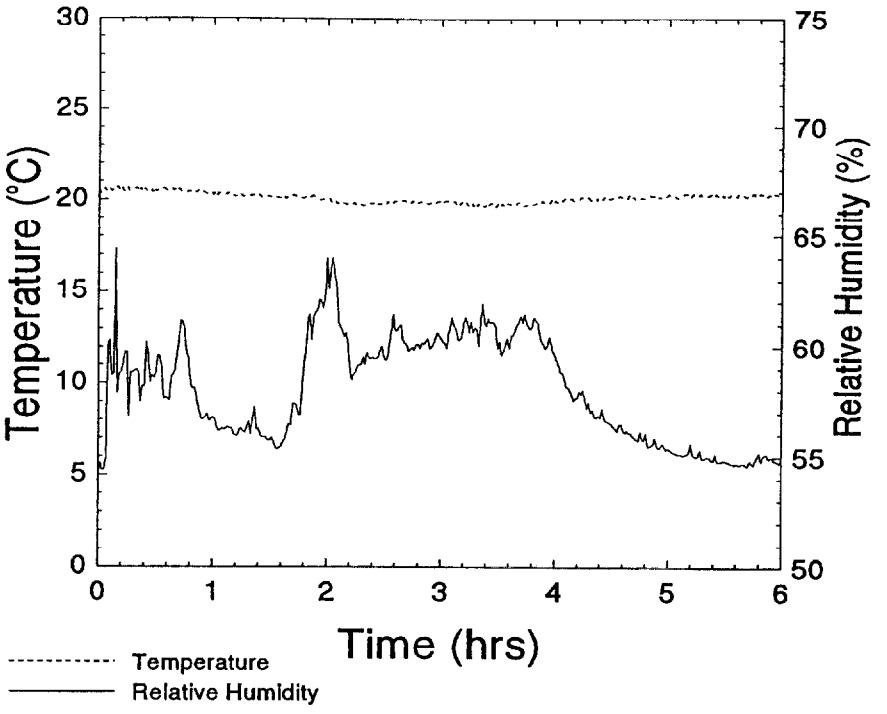


**Figure 25** - Solution D, experiment 1, environmental conditions

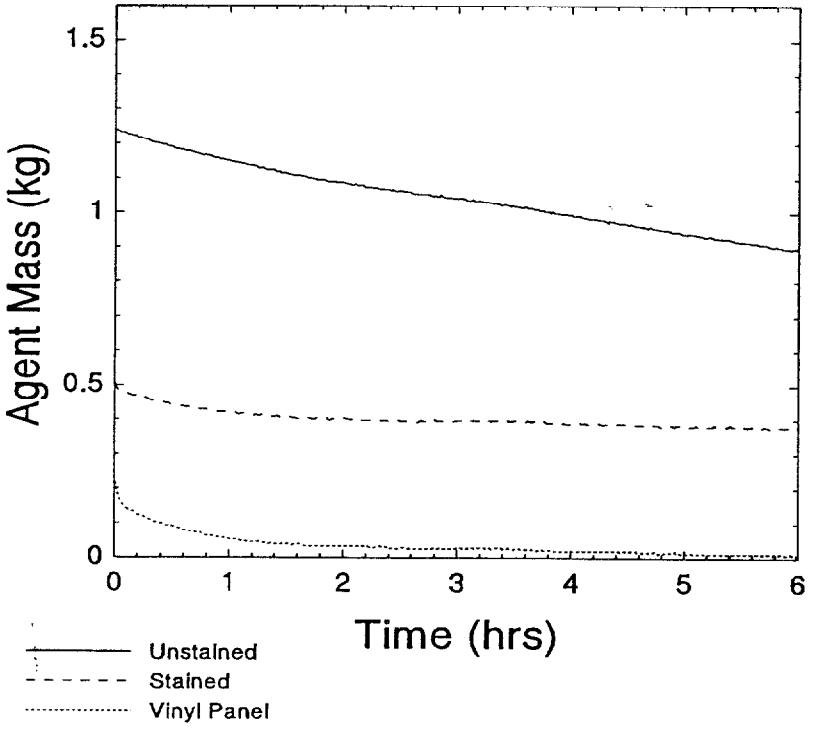


**Figure 26** - Solution D, experiment 1, mass retention

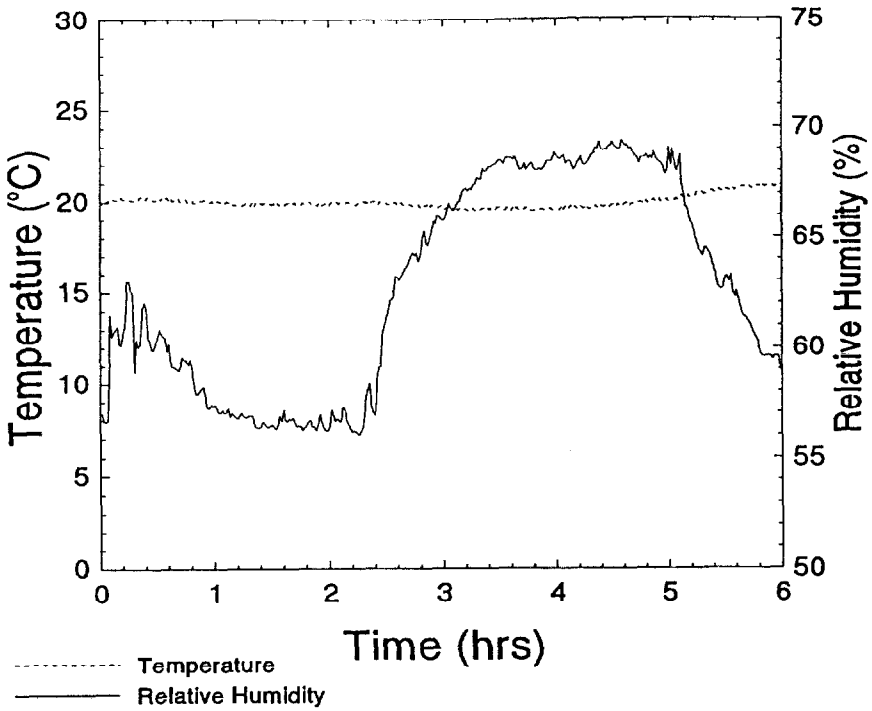


**Figure 27** - Solution D, experiment 2, environmental conditions

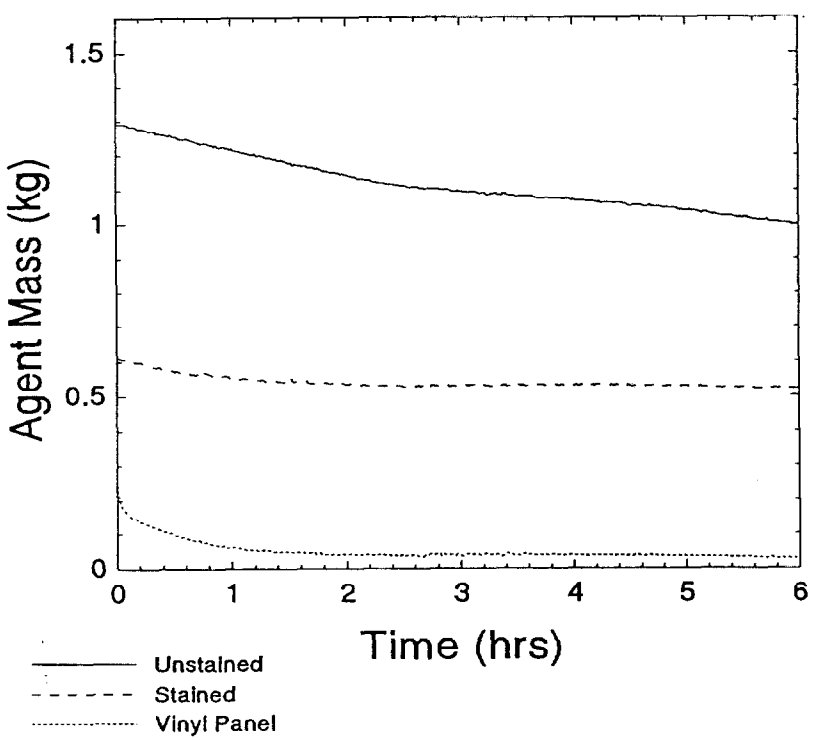


**Figure 28** - Solution D, experiment 2, mass retention

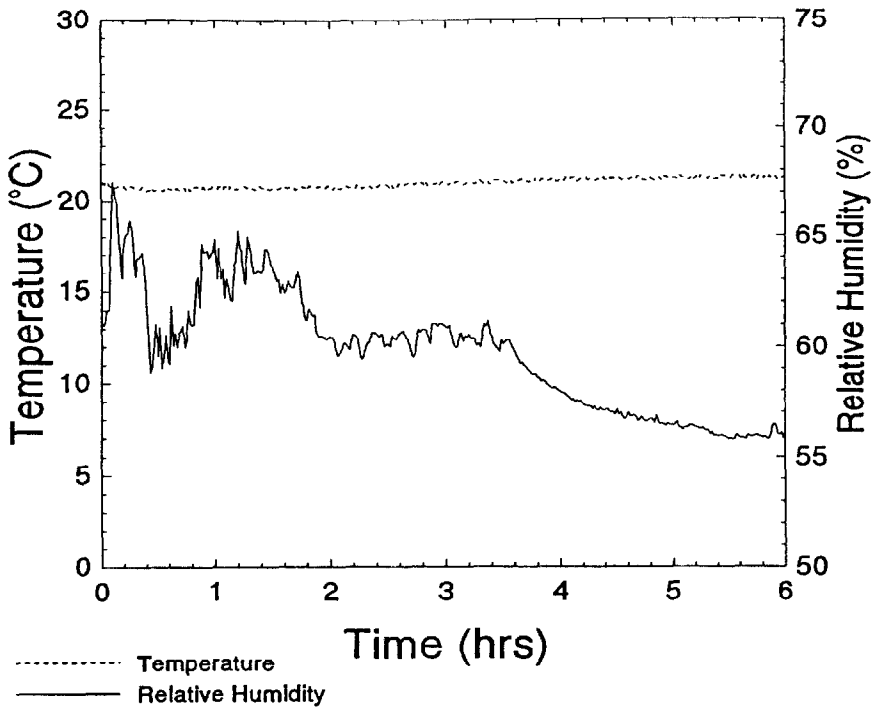


**Figure 29** - Solution D, experiment 3, environmental conditions

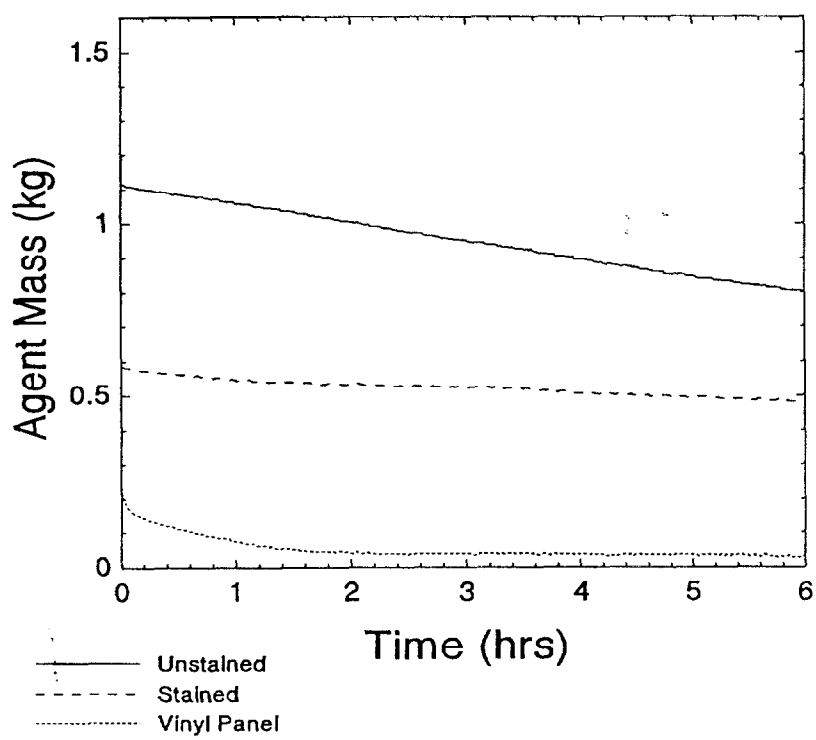


**Figure 30** - Solution D, experiment 3, mass retention

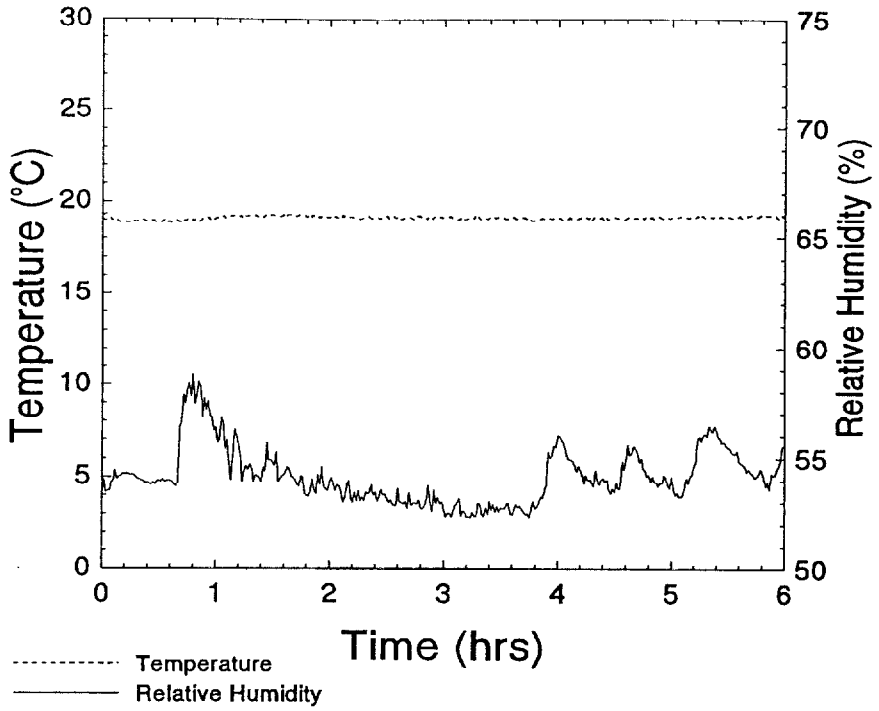


**Figure 31** - Foam A, experiment 1, environmental conditions

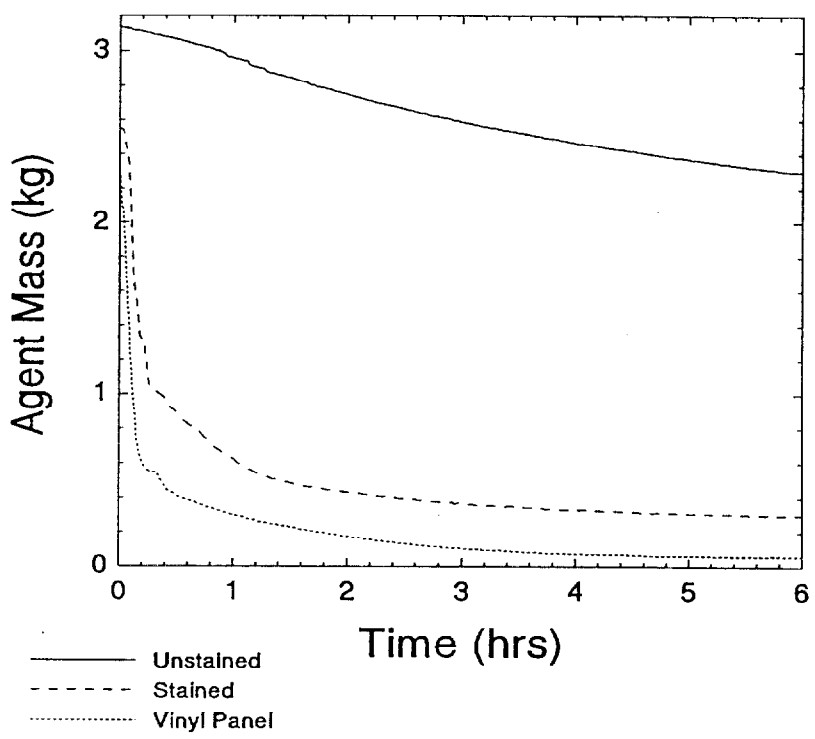


**Figure 32** - Foam A, experiment 1, mass retention

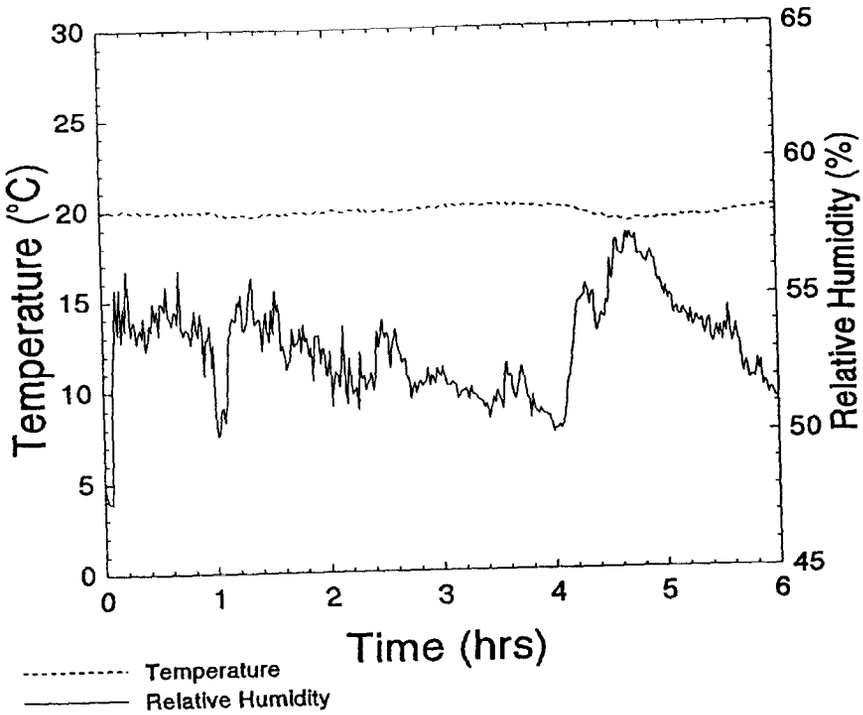


**Figure 33** - Foam A, experiment 2, environmental conditions

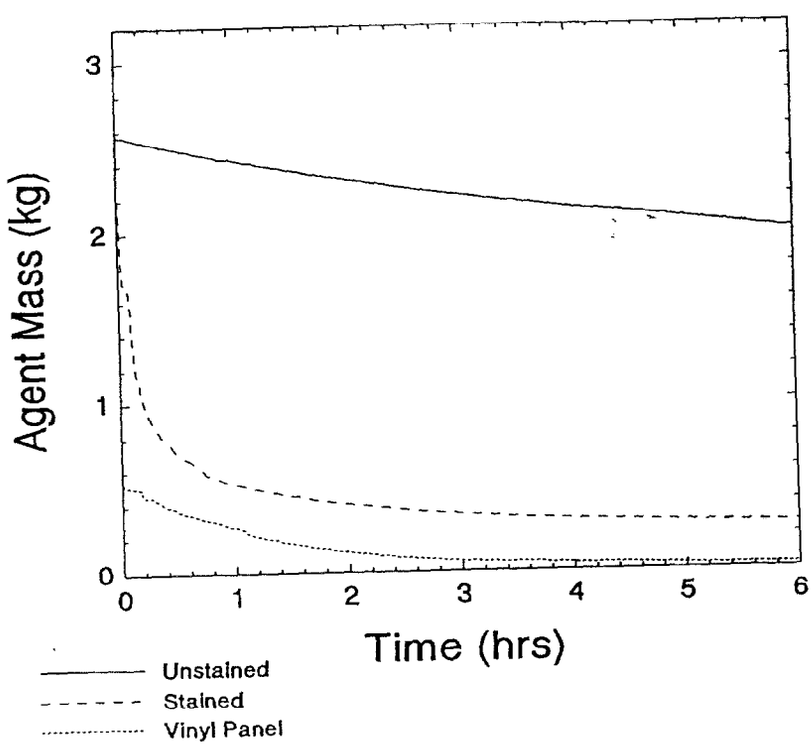


**Figure 34** - Foam A, experiment 2, mass retention

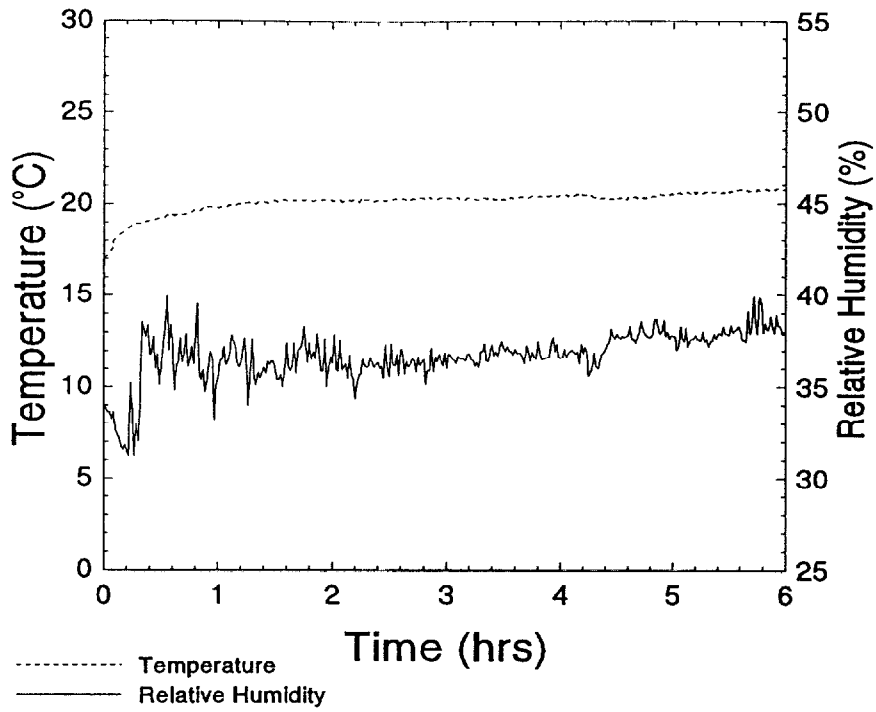


**Figure 35** - Foam A, experiment 3, environmental conditions

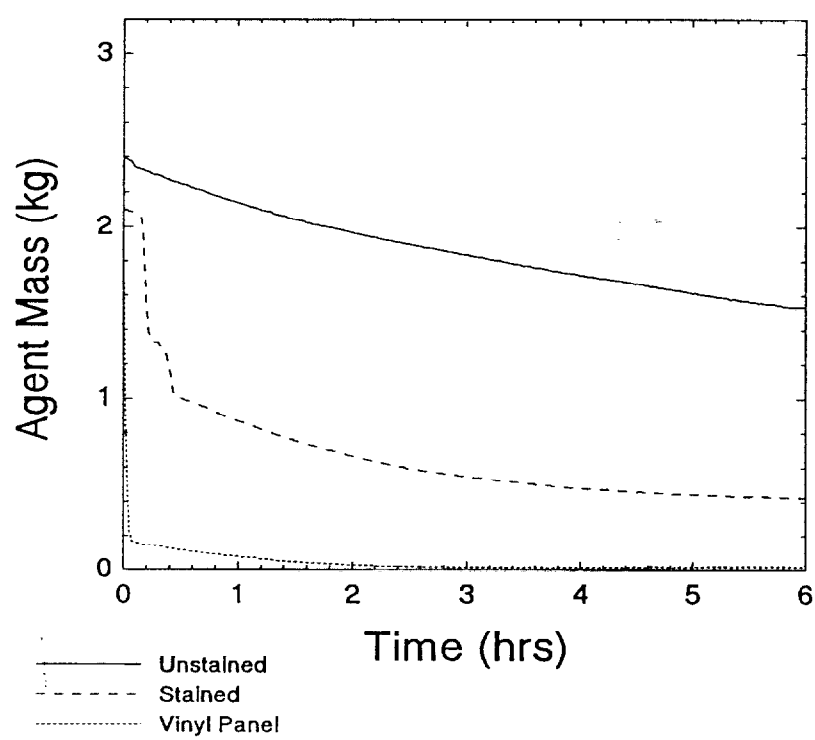


**Figure 36** - Foam A, experiment 3, mass retention

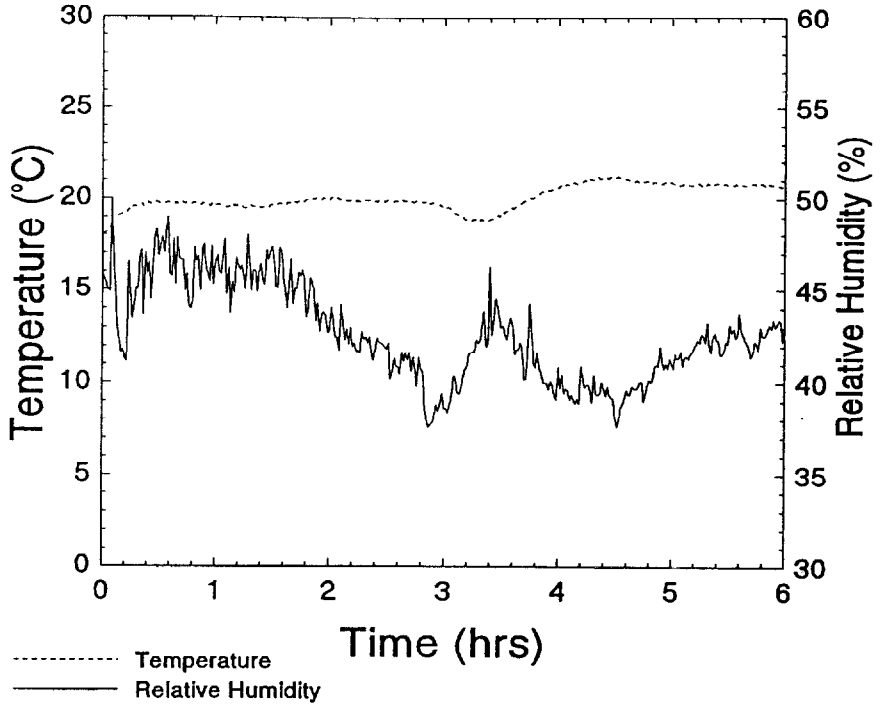


**Figure 37** - Foam B, experiment 1, environmental conditions

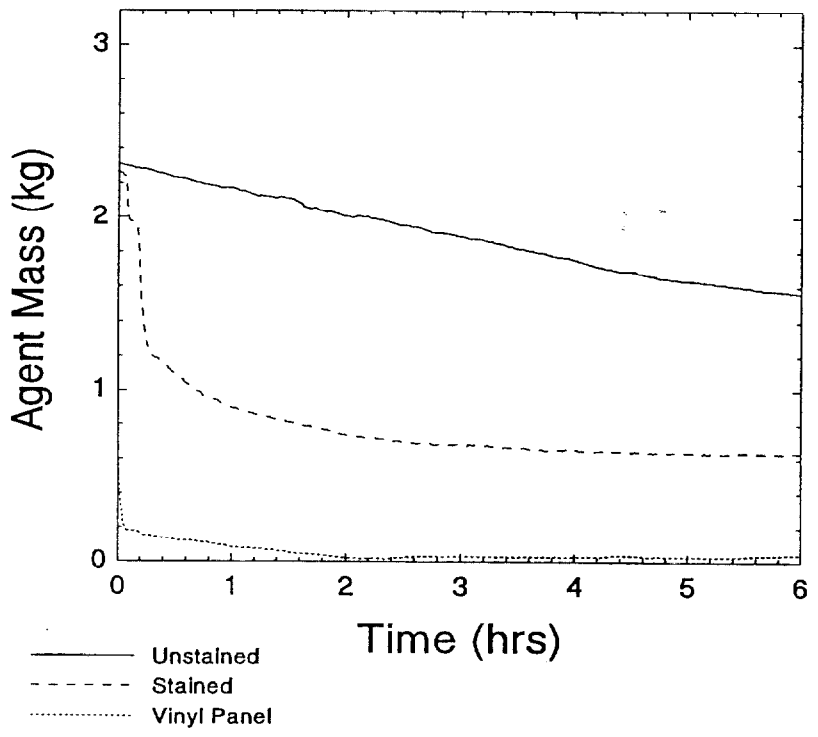


**Figure 38** - Foam B, experiment 1, mass retention

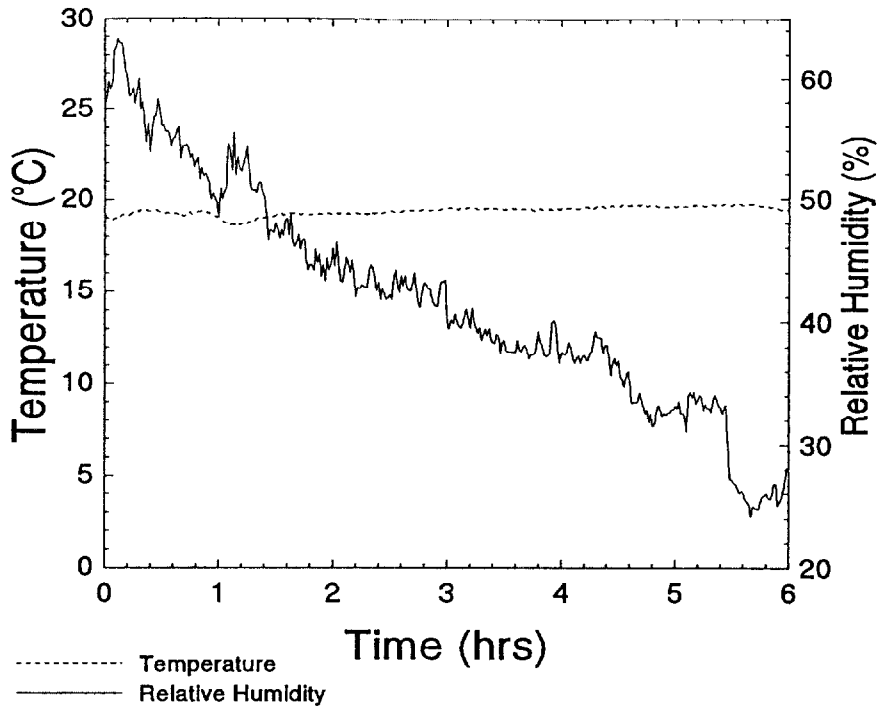


**Figure 39** - Foam B, experiment 2, environmental conditions

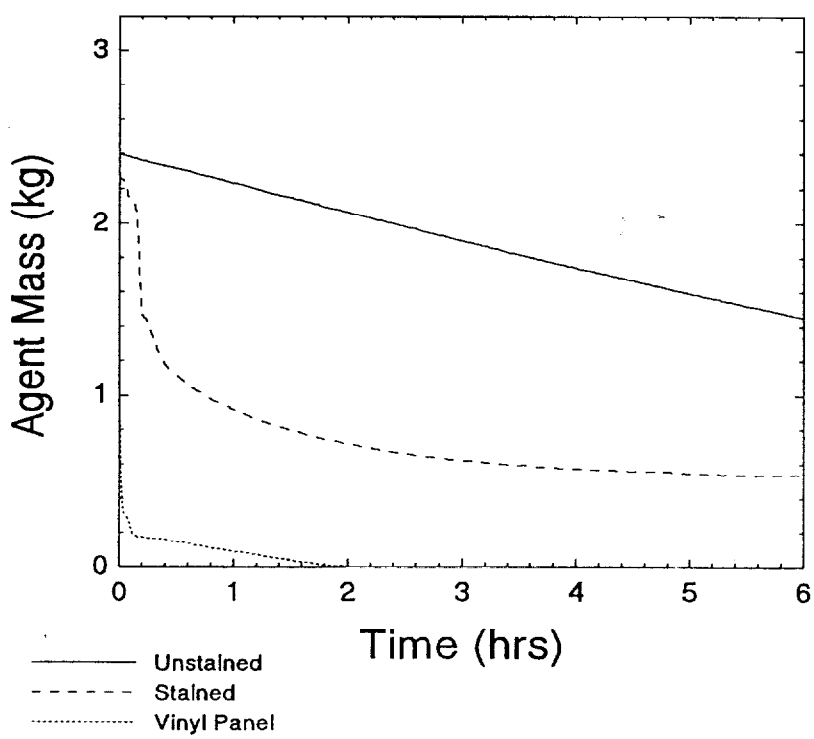


**Figure 40** - Foam B, experiment 2, mass retention

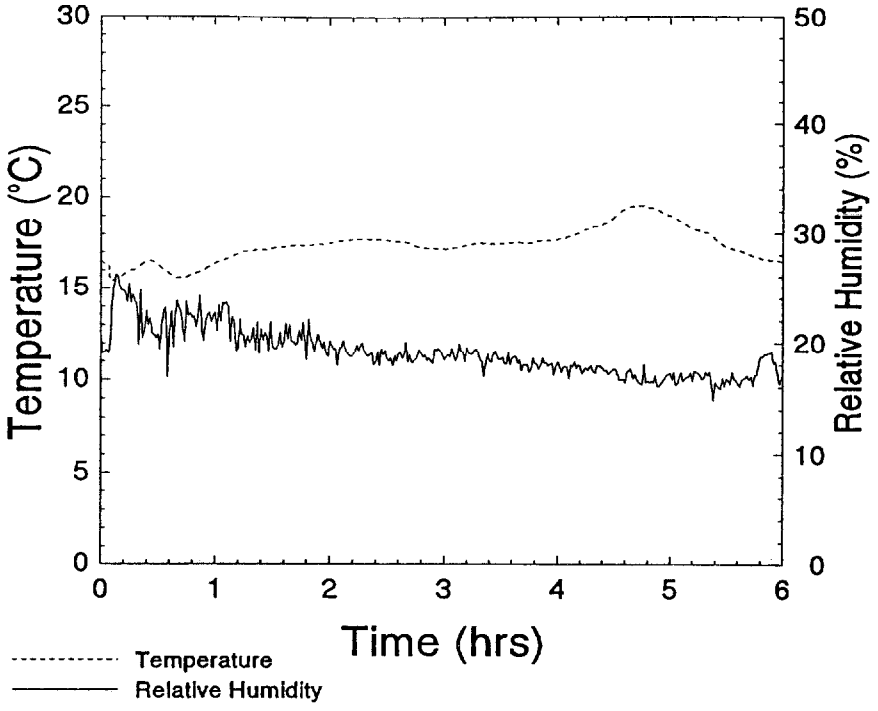


**Figure 41** - Foam B, experiment 3, environmental conditions

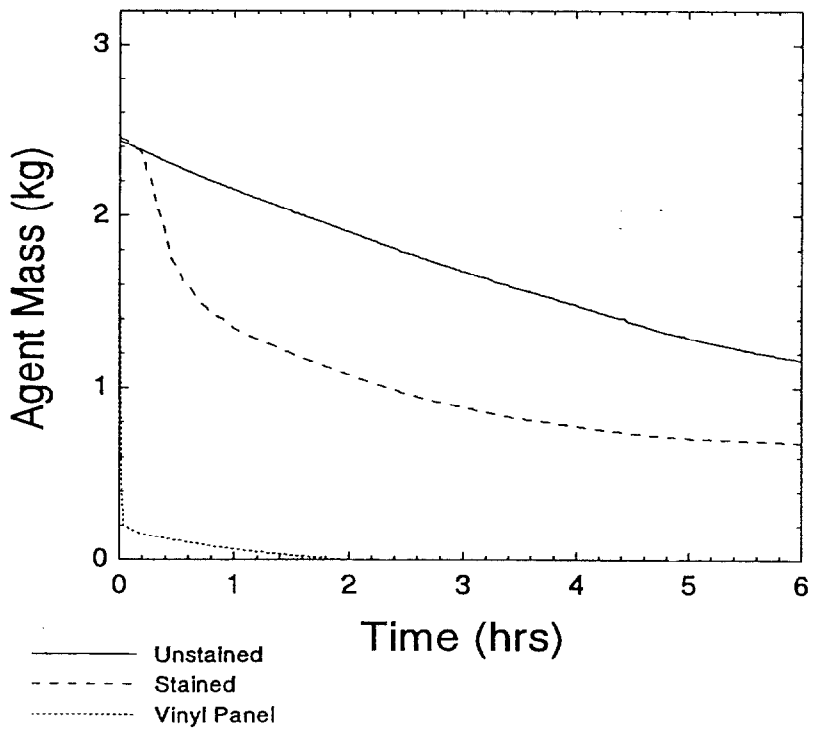


**Figure 42** - Foam B, experiment 3, mass retention

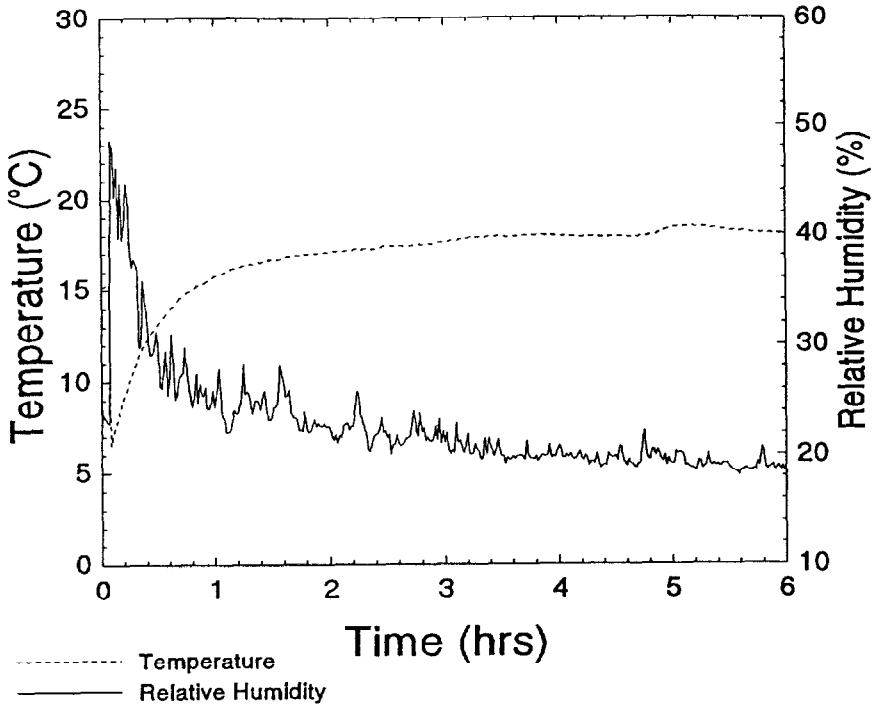


**Figure 43** - Foam C, experiment 1, environmental conditions

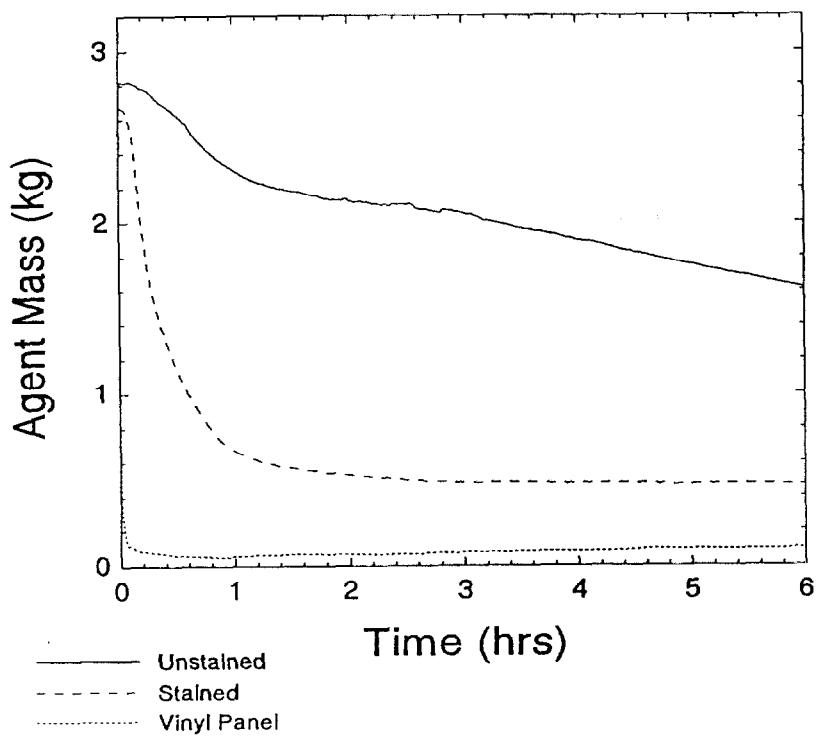


**Figure 44** - Foam C, experiment 1, mass retention

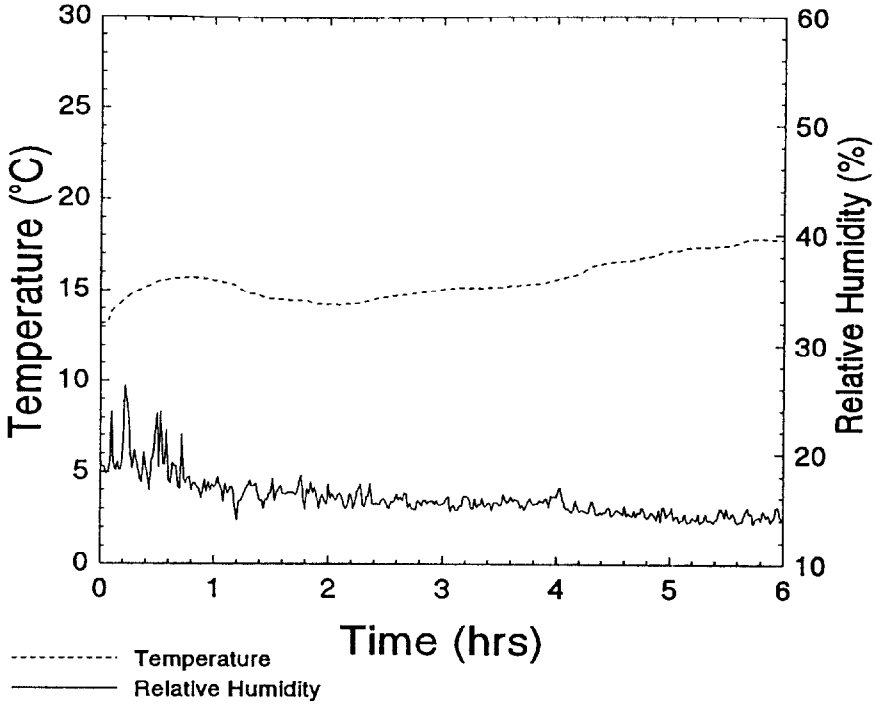


**Figure 45** - Foam C, experiment 2, environmental conditions

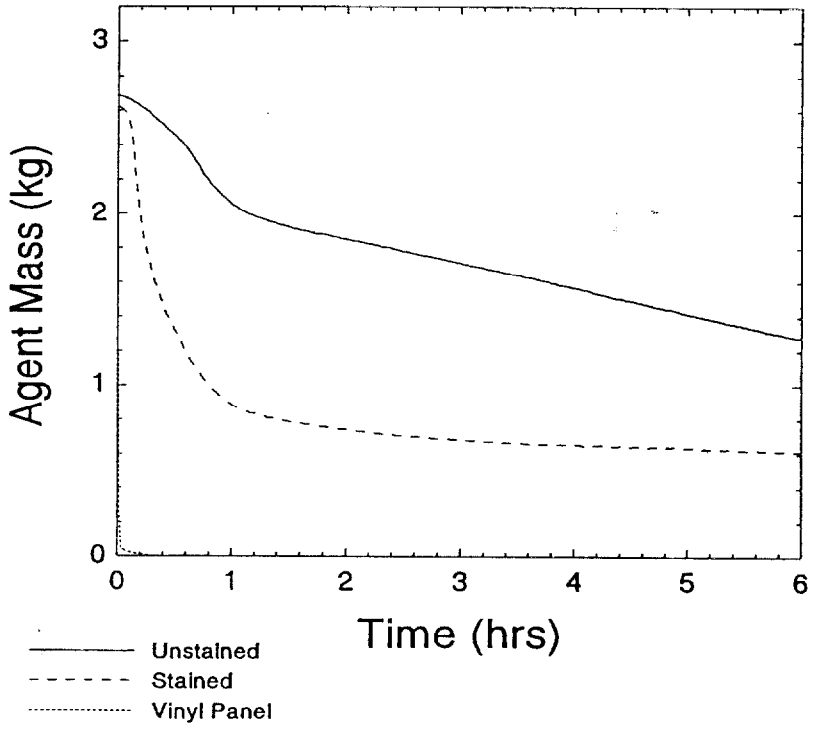


**Figure 46** - Foam C, experiment 2, mass retention

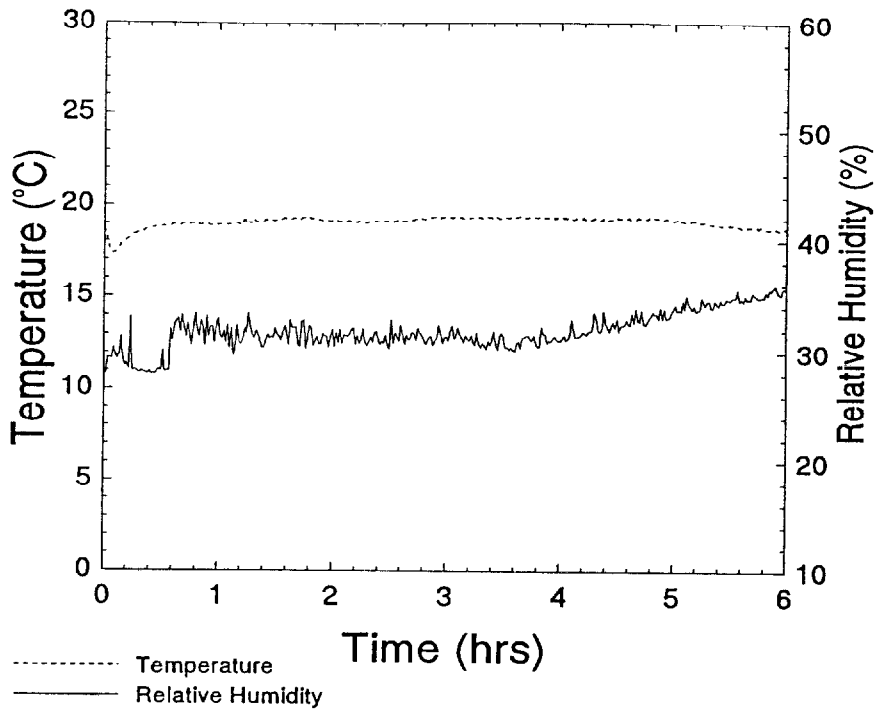


**Figure 47** - Foam C, experiment 3, environmental conditions

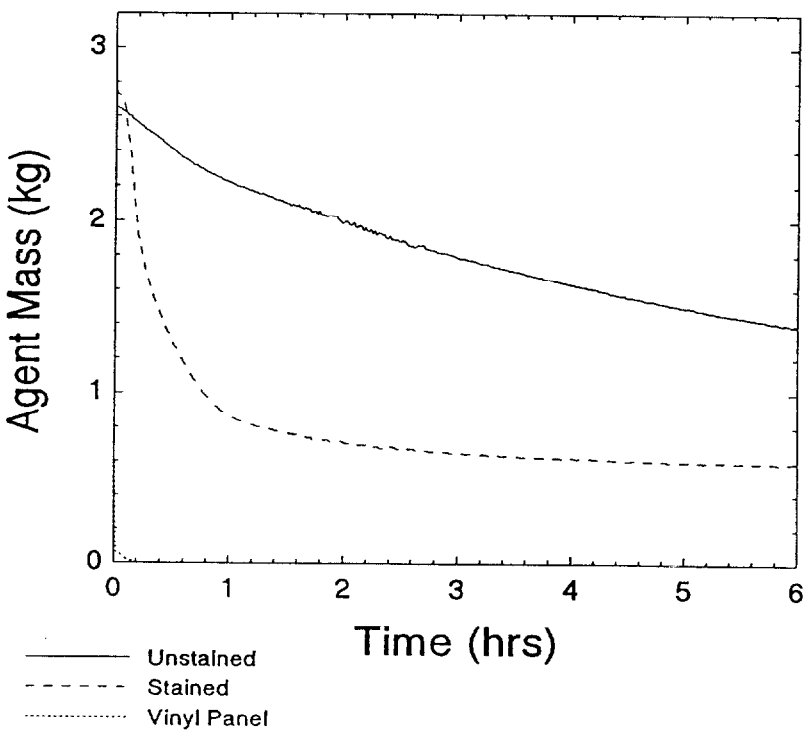


**Figure 48** - Foam C, experiment 3, mass retention

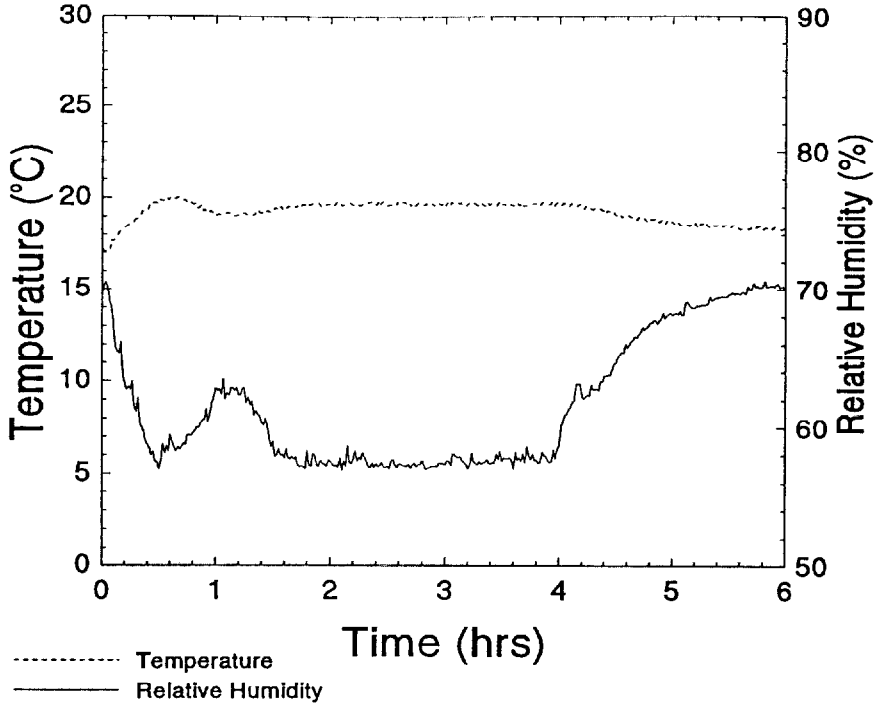


**Figure 49** - Foam D, experiment 1, environmental conditions

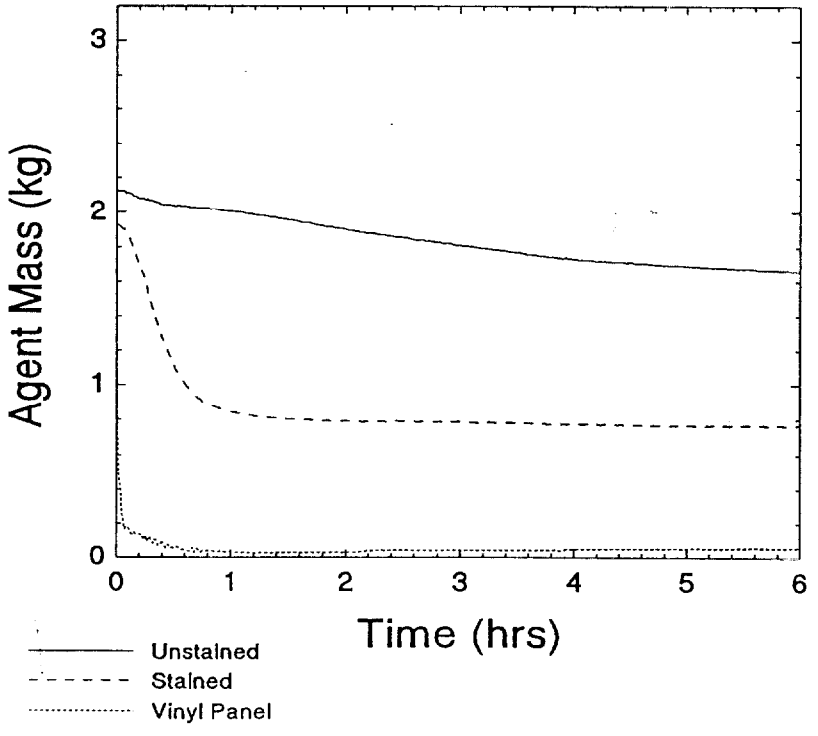


**Figure 50** - Foam D, experiment 1, mass retention

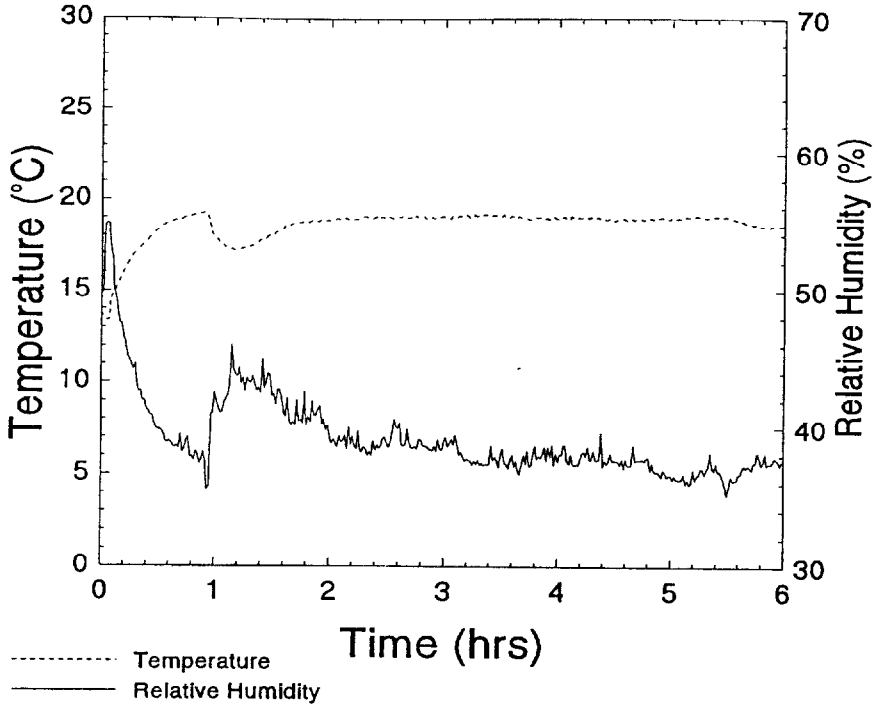


**Figure 51** - Foam D, experiment 2, environmental conditions

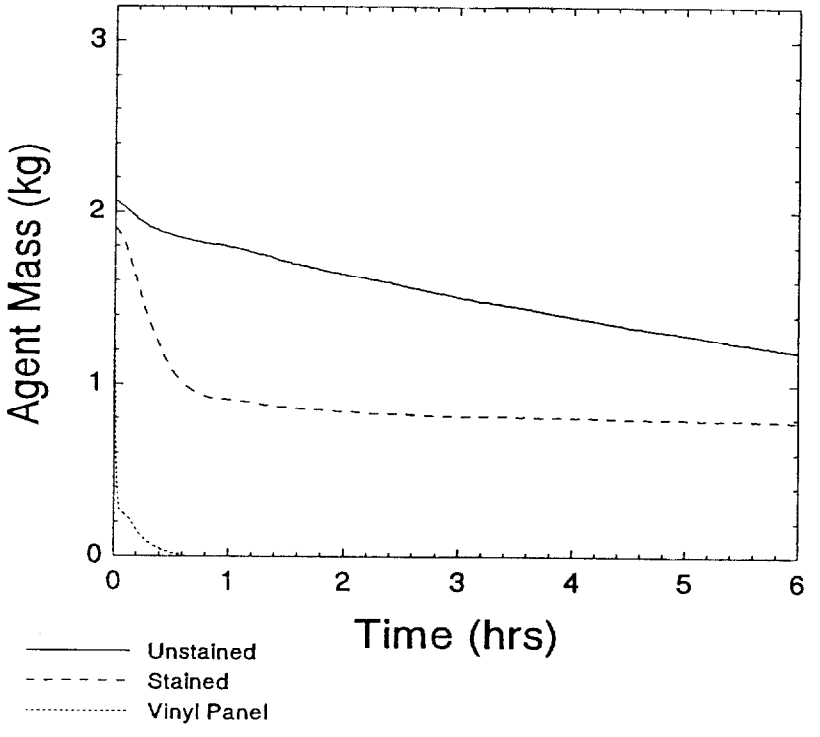


**Figure 52** - Foam D, experiment 2, mass retention

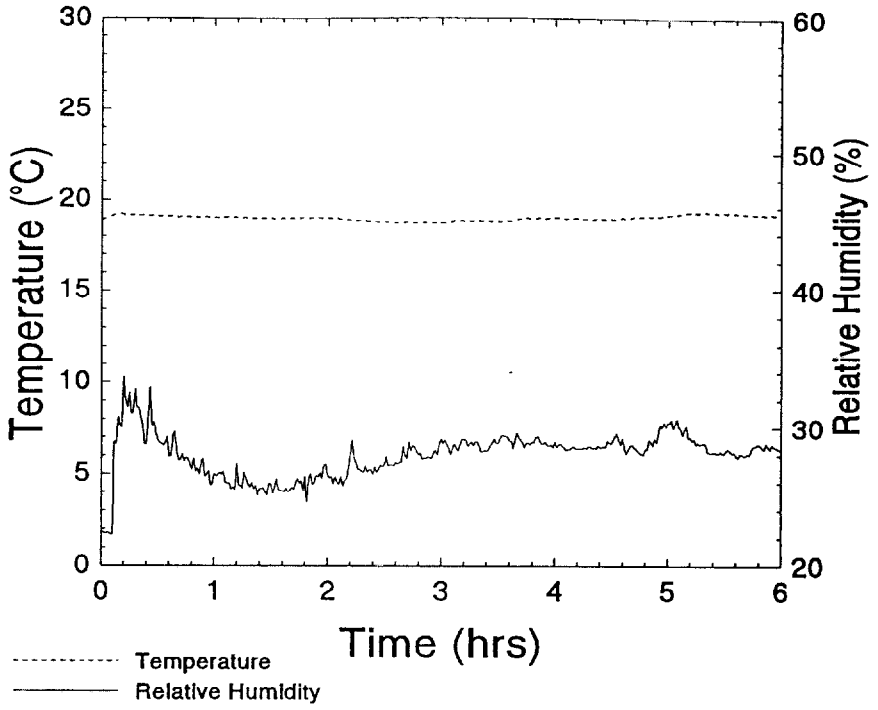


**Figure 53** - Foam D, experiment 3, environmental conditions

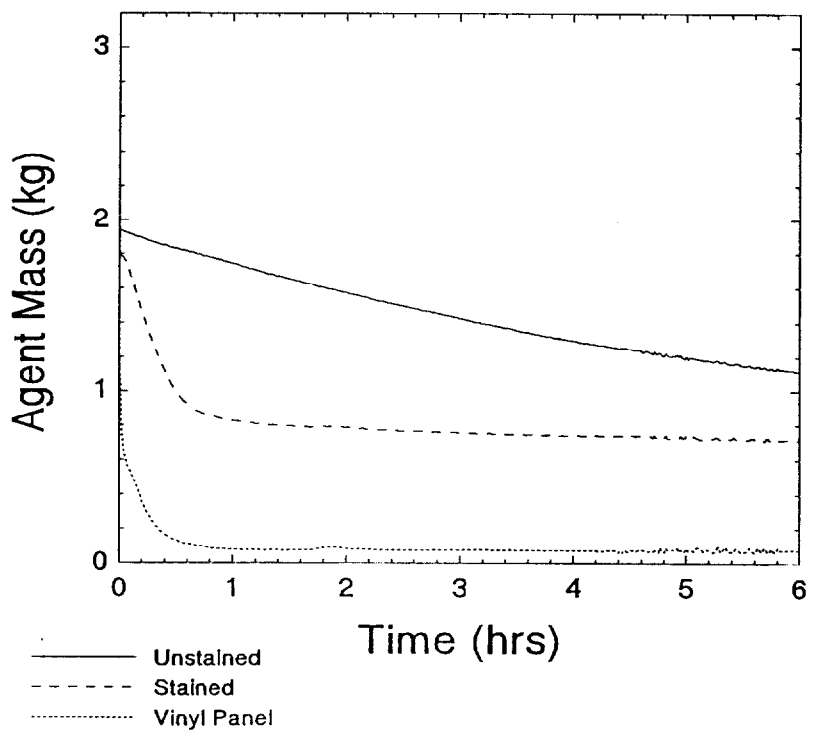


**Figure 54** - Foam D, experiment 3, mass retention