

National Aeronautics and  
Space Administration  
**George C. Marshall Space Flight Center**  
Marshall Space Flight Center, AL 35812



Reply to Attn of: EH42A (98-141)

July 17, 1998

TO: CO30/S. A. Little  
FROM: EH42/ S. V. Caruso  
SUBJECT: Space Act Agreement 97001 (BEPS) Results

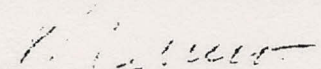
The Environmental and Analytical Chemistry Branch performed oil adsorption tests for the provided medium- human hair. The tests were conducted for five densities of the hair. Phase 1 involved exposing the hair packages to an oil and water environment and was completed on May 28, 1998. Phase 2 was an oil and water extraction technique and was initiated on June 25, 1998. Phase 2 was conducted within the EPA recommended 28 day range for oil and grease samples. Attached are the Phase 1 and Phase 2 procedures.

The results were based on how much oil a gram of hair would absorb for each density. The results are listed in the table below.

Average Hair Mass (grams)	Average Oil Adsorbed by Hair (grams)	Average Oil Adsorbed Per Gram of Hair (grams/gram) (Adsorption Factor)
1.49	7.66	5.14
4.09	19.22	4.70
6.77	37.20	5.50
9.35	49.15	5.26
11.95	55.88	4.68

The results above are based on the hair only. The oil adsorbed attributed to the nylon mesh bag was subtracted from the value as well as any water that was adsorbed. In Attachments C-E, more detailed information is provided.

These results are based upon the analysis of only human hair, no current commercial products were analyzed for comparison studies. Therefore, any conclusions drawn as to this product's standing with other products must be reserved until such tests are performed.

  
S. V. Caruso  
Chief  
Environmental and Analytical