

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. REPORT DATE (DD-MM-YYYY)	2. REPORT TYPE Technical Papers	3. DATES COVERED (From - To)
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4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
	5d. PROJECT NUMBER 1011
6. AUTHOR(S)	5e. TASK NUMBER CA9F
	5f. WORK UNIT NUMBER 346161
	8. PERFORMING ORGANIZATION REPORT

Please see attached

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Air Force Research Laboratory (AFMC) AFRL/PRS 5 Pollux Drive Edwards AFB CA 93524-7048	10. SPONSOR/MONITOR'S ACRONYM(S)
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9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) Air Force Research Laboratory (AFMC) AFRL/PRS 5 Pollux Drive Edwards AFB CA 93524-7048	11. SPONSOR/MONITOR'S NUMBER(S) Please see attached
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12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT

20030127 214

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT A	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON Leilani Richardson
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (include area code) (661) 275-5015

MEMORANDUM FOR PRS (In-House Contractor Publication)

FROM: PROI (STINFO)

17 Dec 2001

SUBJECT: Authorization for Release of Technical Information, Control Number: **AFRL-PR-ED-AB-2001-243**
Rusty Blanski; Justin Leland (ERC); Brent Viers; Shawn Phillips "Hybrid Inorganic-Organic
Performance Fluids Based on Polyhedral Oligomeric Silsesquioxanes (POSS)" *ABSTRACT ONLY*

Materials Research Society Meeting
(San Francisco, CA, 1-6 April 2002)

(Deadline: 31 Jan 2002)

(Statement A)

- 1. This request has been reviewed by the Foreign Disclosure Office for: a.) appropriateness of distribution statement, b.) military/national critical technology, c.) export controls or distribution restrictions, d.) appropriateness for release to a foreign nation, and e.) technical sensitivity and/or economic sensitivity.

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Comments: _____

APPROVED/APPROVED AS AMENDED/DISAPPROVED

PHILIP A. KESSEL Date
Technical Advisor
Space and Missile Propulsion Division

HYBRID INORGANIC-ORGANIC PERFORMANCE FLUIDS BASED ON POLYHEDRAL
OLIGOMERIC SILSESQUIOXANES (POSS)

Rusty Blanski, Justin Leland, Brent Viers and Shawn H. Phillips

Performance fluids that operate at high temperature can be useful for many applications including highly efficient automobile engines and jet turbines. One challenging aspect to this project is to increase the use temperature of the performance fluid while maintaining low temperature pourability. One possible solution to this hurdle is to combine the high temperature stability of a silsesquioxane framework with the lubricity of hydrocarbons. Data will be presented on a wide variety of POSS alkyls were synthesized to test the various POSS frameworks for temperature stability and pourability at lower temperatures. Thermal and viscosity data will also be discussed.

DISTRIBUTION STATEMENT A

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