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**AMENDED FINAL REPORT**  
(Replaces Final Report Issued 06/19/13)  
(See Study Dates and Facilities section for details)

**VIRUCIDAL HARD-SURFACE EFFICACY TEST- Human Coronavirus**

Test Agent  
GK-GermKiller<sup>®</sup> Surface™

Test Organism  
Human Coronavirus, Strain 229E, ATCC VR-740

Test Guideline  
EPA Guidelines 810.2200 (f) 3

Author  
S. Steve Zhou, Ph.D.

Study Completion Date  
06/13/2013

Performing Laboratory  
MicroBioTest  
A Division of Microbac Laboratories, Inc.  
105 Carpenter Drive  
Sterling, Virginia 20164

Laboratory Project Identification Number  
838-101

Protocol Identification Number  
VAN.1a.05.16.13

Sponsor  
Vance Chemicals Pte. Ltd.  
24 Gul Lane  
Singapore, 629418  
Republic of Singapore

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## TEST SUMMARY

**TITLE:** Virucidal Hard-surface Efficacy Test - Human Coronavirus

**STUDY DESIGN:** This study was performed according to the signed protocol and project sheet(s) issued by the Study Director (See Appendix). Raw data included with appendix.

### TEST AGENT(S) SUPPLIED BY THE SPONSOR OF THE STUDY:

1. GK-GermKiller<sup>®</sup> Surface<sup>™</sup>; Batch No. 1: BN130069, received at MicroBioTest 05/30/13, and assigned DS No. D318
2. GK-GermKiller<sup>®</sup> Surface<sup>™</sup>; Batch No. 2: BN130160, received at MicroBioTest 05/30/13, and assigned DS No. D319

**SPONSOR:** Vance Chemicals Pte. Ltd.  
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Republic of Singapore

## CONCLUSIONS

According to the regulatory agencies, the test agent passes the Virucidal Hard-surface Efficacy Test if there is complete inactivation of the challenge virus at all dilutions. When cytotoxicity is evident, at least a three- $\log_{10}$  reduction in titer must be demonstrated beyond the cytotoxic level.

When tested as described, GK- GermKiller<sup>®</sup> Surface<sup>™</sup> passed the Virucidal Hard-surface Efficacy Test when Human Coronavirus, containing at least 5% organic soil, was exposed to the test agent for 3 minutes at 21°C. Test agent achieved log reduction of 99.9%. All of the controls met the criteria for a valid test. These conclusions are based on observed data.