INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY

Contamination Control Division Recommended Practice 016.2

IEST-RP-CC016.2

The Rate of Deposition of Nonvolatile Residue in Cleanrooms

INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY
1827 Walden Office Square, Suite 400 |
Schaumburg, IL 60173 USA
Phone: (847) 981-0100 • Fax: (847) 981-4130
E-mail: iest@iest.org • Web: www.iest.org

Documents
Document Sharing Hub

Full document details: IEST RP-CC016.2 2017

Documents
Document Sharing Hub

Full document details: IEST RP-CC016.2 2017

This Recommended Practice is published by the INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY to advance contamination control and the technical and engineering sciences. Its use is entirely voluntary, and determination of its applicability and suitability for any particular use is solely the responsibility of the user.

This Recommended Practice was prepared by and is under the jurisdiction of Working Group 016 of the IEST Contamination Control Division.

Copyright © 2002 by the INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY

Second printing, July 2017

ISBN 978-1-877862-87-8

PROPOSAL FOR IMPROVEMENT: The Working Groups of the INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY are continually working on improvements to their Recommended Practices and Reference Documents. Suggestions from those who use these documents are welcome. If you have a suggestion regarding this document, please use the online Proposal for Improvement form found on the IEST website at www.iest.org/proposal/form.html.

INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY
1827 Walden Office Square, Suite 400 | Schaumburg, IL 60173 USA
Phone: (847) 981-0100 • Fax: (847) 981-4130
E-mail: iest@iest.org • Web: www.iest.org

Copyrighted © material
Documents
Document Sharing Hub
Full document details: IEST RP-CC016.2 2017

Documents
Document Sharing Hub

Full document details: IEST RP-CC016.2 2017

The Rate of Deposition of Nonvolatile Residue in Cleanrooms

IEST-RP-CC016.2

CONTENTS

SECTION

1 SCOPE AND LIMITATIONS 7
2 BACKGROUND AND PURPOSE 7
3 REFERENCES 8
4 TERMS, DEFINITIONS, AND SYMBOLS 8
5 RATE OF DEPOSITION OF NONVOLATILE RESIDUE 10
6 DEPOSITION RATE CALCULATIONS 10
7 NVR DEPOSITION RATE LEVEL CONVERSIONS 12
8 PHYSICS OF NVR DEPOSITION 12
9 TECHNIQUES FOR MEASURING THE DEPOSITION OF NVR 13
10 REPORTING AND ANALYSIS OF RESULTS 19
11 BIBLIOGRAPHY 19

TABLE

1 NVR RATE LEVELS 11
2 CONVERSION FACTORS (1) 13
3. APPROXIMATE SENSITIVITIES OF VARIOUS AT-CUT QUARTZ CRYSTALS 17

FIGURE

1 LOCATIONS FOR SAMPLING IN A CLEANROOM OR CLEAN ZONE HAVING NONUNIDIRECTIONAL AIRFLOW AND HAVING AN AREA SMALLER THAN 15 M^2 (150 FT^2) 18
2 LOCATIONS FOR SAMPLING IN A CLEANROOM OR CLEAN ZONE HAVING NONUNIDIRECTIONAL AIRFLOW AND HAVING AN AREA BETWEEN 15 M^2 (150 FT^2) AND 100 M^2 (1000 FT^2). 18
3. EXAMPLE OF LOCATIONS FOR SAMPLING IN A CLEANROOM OR CLEAN ZONE HAVING HORIZONTAL UNIDIRECTIONAL AIRFLOW. 18
4. EXAMPLE OF LOCATIONS FOR SAMPLING IN A CLEANROOM OR CLEAN ZONE HAVING VERTICAL UNIDIRECTIONAL AIRFLOW. 18

Copyrighted © material
Documents Document Sharing Hub
Full document details: IEST RP-CC016.2 2017

Documents
Document Sharing Hub
Full document details: IEST RP-CC016.2 2017