

**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

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1 SCOPE AND LIMITATIONS

1.1 Scope

This Recommended Practice (RP) provides a uniform method and basis for defining the rates of deposition of nonvolatile residue (NVR) and other forms of molecular contamination on surfaces in cleanrooms.

1.2 Limitations

This RP may be applied to the certification of cleanrooms or for monitoring cleanrooms to the extent agreed upon by the parties involved. In contractual agreements, the customer selects the specific measurements appropriate to the cleanroom under consideration. Specific acceptance limits are also defined in contractual agreements.

The requirements for the maximum rate of deposition of NVR should be specified by the user. The specified requirements can affect the design of the heating, ventilating, and air conditioning (HVAC) system; the selection of suitable filters, and the selection of materials users in the construction of the cleanroom. Designers, builders, and users of cleanrooms should consider specifying the maximum deposition rates as suggested by this RP if the deposition of NVR can affect the performance of products.

The techniques for measuring NVR described in this document are not the only methods that can be used, but they should be considered because of their general use. The requirements for specific products and

processes should be considered in the selection of measurement methods.

Products and procedures contained in this RP may involve hazardous materials, operations, and equipment. This RP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use of this RP.

2 BACKGROUND AND PURPOSE

Cleanrooms are designed to protect products from contaminants that affect the performance of those products.

Molecular contaminants, introduced by the air that enters the cleanroom or by emissions from items within the cleanroom, are deposited onto surfaces in the form of thin films or droplets; these types of deposits are called NVR. The molecular contaminants are typically transported in the air as gases or as liquid aerosols. This type of contamination is frequently referred to as airborne molecular contamination or AMC.

This RP is for use in defining the cleanroom environment and may be used in a contract with the agreement of customer and supplier. In addition, this RP is intended to complement standards on allowable NVR and molecular contaminants on products, such as IEST-STD-CC1246.