



George C. Marshall Space Flight Center  
Marshall Space Flight Center, Alabama 35812

EM50-OWI-010  
Revision D  
April 27, 2005

# ORGANIZATIONAL WORK INSTRUCTION

## EM50

# NONVOLATILE RESIDUE CONTENT (NVR)

## Revision D

APPROVING  
AUTHORITY

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EM50

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CHECK THE MASTER LIST—  
VERIFY THAT THIS IS THE CORRECT VERSION BEFORE USE

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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Revision	A	6-1-99	Revision to incorporate re-organizational changes
Revision	B	02-22-00	Change QMS documents to directives
Revision	C	08-31-04	Revisions made due to HQ mandate
Revision	D	04-27-05	Changes made due to reorganization

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## ANALYSIS OF NONVOLATILE RESIDUE CONTENT (NVR)

### 1. SCOPE

1.1 Scope. This document establishes the standard operating procedure for the nonvolatile residue analysis.

1.2 Purpose. The purpose of this document is to outline the steps necessary for nonvolatile residue analysis of material surfaces.

1.3 Applicability. This document only applies to the nonvolatile residue analysis done by EM50 personnel. This operating procedure is not a substitute for formal training. Untrained personnel shall not attempt to use this document to operate this equipment unless supervised by trained, experienced personnel.

### 2. APPLICABLE DOCUMENTS

EM50-OWI-002 - Documentation and Data Control

EM50-OWI-003 - Control of Quality Records

MSFC-PROC-1831 - The Analysis of Nonvolatile Residue Content

### 3. DEFINITIONS

3.1 Nonvolatile residue (NVR) is the material remaining after filtration and temperature controlled evaporation of a volatile liquid (usually measured in milligrams per unit volume).

### 4. INSTRUCTIONS

This analysis will be done per MSFC-PROC-1831.

### 5. NOTES

None

### 6. SAFETY PRECAUTIONS AND WARNING NOTES

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Normal precautions shall be used in the handling of volatile or flammable liquids.

## 7. APPENDICES, DATA, REPORTS, AND FORMS

The standard procedure for analysis of NVR residue content is found in MSFC-PROC-1831.

All data taken shall be recorded in the NVR lab logbook. The NVR results shall be reported to the customer by EM50 memo or test report.

## 8. RECORDS

A work request form per EM50-OWI-002, shall accompany the sample which will have a Group tracking number. This information will be logged into the lab logbook located near the NVR equipment. This entry will identify the sample, the requester and NVR tracking number and any other unique identifiers. After completion of analysis a report will be generated of the data and reported to the requester. A copy of this report is then filed in the Group archive. These records shall be in compliance with MPG 1441.1 per EM50-OWI-003.

## 9. TOOLS, EQUIPMENT, AND MATERIALS

Those tools, equipment and materials called for in MSFC-PROC-1831 are required.

## 10. PERSONNEL TRAINING AND CERTIFICATION

Before using the NVR system personnel shall be trained by a qualified user in all aspects of this instrument. They shall be certified by the Group Lead to be a qualified user before being left alone to generate data to be reported outside the Group.