





# CALIFORNIA

## AIR RESOURCES BOARD

### Standard Operating Procedure for Consumer Product Sample Batch Management and Reporting

SAS13  
Revision 0.0

Northern Laboratory Branch  
Monitoring and Laboratory Division

Approval Signatures	Approval Date
 Manisha Singh, Ph.D., Chief Quality Management Branch	8/5/19
 Michael Werst, Chief Northern Laboratory Branch	8/5/19

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# Standard Operating Procedure for Consumer Product Sample Batch Management and Reporting

## 1 Introduction

This procedure describes the process for sample batch management and reporting under Method 310 as required by the Consumer Products Regulations.

## 2 Summary of Method

This procedure describes creating a sample batch and carrying it through multiple processes and analyses to determine Volatile Organic Compounds (VOCs) under Method 310. Additionally, it details the process for compiling data and results for multiple analyses, generating reports for each sample and quality control data for the sample batch.

## 3 Acronyms and Definitions

Acronym or Term	Definition
aliquot	A representative portion of a non-aerosol sample or the non-propellant portion of an aerosol sample.
analytical batch	A set of samples analyzed together as a group for a particular analysis.
Batch Sample (BS)	A laboratory prepared sample aliquot of known concentration for QC evaluation under Method 310.
CARB	California Air Resources Board
COC	Chain of Custody (Laboratory Request and Sample Transfer Form)
duplicate	A second analysis of a sample submitted for analysis under Method 310.
duplicate aliquot	An additional sample aliquot from the same sample carried through all steps of the sampling and analytical procedures of Method 310 in an identical manner.
ID	Identification
LIMS	Laboratory Information Management System
LIMS Manual	Consumer Products Database Special Analysis Section (Oracle Database and Applications Manual for LIMS)
NLB	Northern Laboratory Branch
QC	Quality Control
QCM	Quality Control Manual
sample	The sample submitted for analysis under Method 310.
sample aliquot	The sample aliquot is any aliquot used for analysis, and

	includes the duplicate aliquot, the Batch Sample, or any archive aliquot undergoing a re-test.
sample batch	A set of samples analyzed together under Method 310.
SOP	Standard Operating Procedure
VOC	Volatile Organic Compound(s)

#### **4 Interferences**

- 4.1 Interferences for each individual method are described in the method specific SOP.
- 4.2 Consumer product packaging may prevent separation of the product from the delivery system. In these cases, only qualitative data will be included on the report.
- 4.3 Consumer product sample matrix may be such that no or only limited analysis is possible. In these cases, note this on the report.

#### **5 Personnel Qualifications**

- 5.1 Prior to performing this method, new personnel must be trained by staff with expert knowledge of this method. Personnel must be trained to understand the program's requirements per any applicable state and federal regulations and guidance, and this SOP. Personnel will also be trained on how to safely and properly operate the equipment needed to perform the method, the quality assurance components, and LIMS functionality pertaining to the program.
- 5.2 Personnel should provide an initial demonstration of capability prior to performing this method on real-world samples (i.e. data for record).
- 5.3 Training will be documented and maintained by the laboratory supervisor.

#### **6 Safety Requirements**

- 6.1 All personnel must follow the general health and safety requirements found in NLB's Chemical Hygiene Plan.
- 6.2 Analysts should acknowledge any sample labeling for safety warnings, and take appropriate safety measures.
- 6.3 Walk-in refrigerators are equipped with safety releases on the doors to prevent locking persons inside. Personnel should wear appropriate clothing for a low temperature environment, and non-slip footwear as moisture can create a slick floor.

## **7 Hazardous Waste**

- 7.1 For any sample container with product remaining after all required analyses, evaluate the sample container for proper disposal instructions, and consult the Chemical Hygiene Plan as necessary. Store empty sample containers in a secure location until release of custody.

## **8 Equipment, Supplies, and Chemicals**

- 8.1 Personal Computer
- 8.2 Laboratory Information Management System (LIMS)
- 8.3 Beakers and Tri-Pours, various sizes
- 8.4 Gloves, non-powdered nitrile or suitable alternative
- 8.5 Sample and Archive Refrigerator(s), capable of maintaining temperature  $>0^{\circ}\text{C}$  and  $\leq 10^{\circ}\text{C}$ , and capable of being secured with access limited to approved staff

## **9 Procedure**

- 9.1 Create a sample batch.
- 9.1.1 Determine the number of samples to analyze and obtain COC paperwork.
- 9.1.2 Print a Tracking Sheet for the sample batch (see LIMS Manual: Print Sample Set Tracking Sheet).
- 9.1.3 Log the duplicate(s).
- 9.1.3.1 The Tracking Sheet will have an assigned duplicate(s).
- 9.1.3.1.1 The analyst may reassign the duplicate(s) at their discretion.
- 9.1.3.2 Log the duplicate(s) sample ID into the LIMS database (see LIMS Manual: Duplicate Sample Login).
- 9.1.4 Log the Batch Sample (see LIMS Manual: Batch Sample Login).
- 9.1.5 Add samples to the sample batch in LIMS (see LIMS Manual: Sample Set Batch Login).
- 9.2 Transfer custody of samples.
- 9.2.1 Fill out the Transfer Record on the COC. Include any applicable fields indicating the persons involved in the transfer and the date of the transfer.

- 9.2.1.1 It is not required for the transfer of custody to occur at the same time for the entire sample batch.
- 9.3 Record sample ingredients into LIMS (see LIMS Manual: Headspace, Ingredients, and Report Comments).
  - 9.3.1 This is not required prior to beginning sample analysis; however, it can be helpful in determining what analyses are necessary.
  - 9.3.2 If sample does not have an ingredient list, note this in LIMS.
- 9.4 Perform propellant analysis for aerosol samples in the sample batch following SAS05.
  - 9.4.1 Ensure aerosol samples have been inverted for at least twelve hours and are under refrigeration prior to analysis, using a beaker to hold them if necessary.
- 9.5 Prepare non-aerosol samples and the non-propellant portion of aerosol samples in the sample batch for analysis following SAS14.
- 9.6 Analyze the sample batch utilizing the following SOPs: SAS01, SAS03, SAS04, SAS06, and SAS07.
- 9.7 Analyze the sample batch utilizing the following SOPs as necessary: SAS02, SAS07, and SAS09. Use information obtained in SAS06 and sample ingredients to assist in determining the need for additional analyses.
- 9.8 Report comments
  - 9.8.1 Input any report comments into LIMS (see LIMS Manual: Headspace, Ingredients, and Report Comments).
- 9.9 For any sample with data from both SAS01 and SAS09 analyses, select the correct data for the calculation of VOC (see LIMS Manual: Gravimetric Analysis).
- 9.10 Report generation
  - 9.10.1 Generate reports for all samples in the sample batch including the duplicate (see LIMS Manual: Consumer Products Reports).
  - 9.10.2 Generate a report for the Batch Sample (see LIMS Manual: Batch Sample Report).
  - 9.10.3 Generate a QC report (see LIMS Manual: Consumer Products Result and QC Summary Report).

9.11 Submit reports for peer and management review (see LIMS Manual: Peer Review).

9.11.1 The NLB QCM outlines the review process and criteria.

## 10 Quality Control

### 10.1 Table of Quality Controls

QC TYPE	FREQUENCY	CRITERIA	CORRECTIVE ACTION
Duplicate	one duplicate per ten or fewer samples in the sample batch	The duplicate results must be within the error of the method ( $\pm 3$ percent VOC of the average of the results from the duplicate and the corresponding sample).	If outside the QC criteria, reanalyze the sample batch. (Reassigning the duplicate may be necessary if sample matrix is an issue.)
Batch Sample	one per sample batch	The Batch Sample results must be within the error of the method ( $\pm 3$ percent VOC of the known value).	If outside the QC criteria, reanalyze the sample batch.

### 10.2 Equipment Requirements

10.2.1 Verify and record refrigerator temperatures weekly.

10.2.1.1 Sample Refrigerator

10.2.1.1.1 Temperature shall be maintained  $>0^{\circ}\text{C}$  and  $\leq 10^{\circ}\text{C}$ .

10.2.1.1.2 Prior to analysis, aerosol samples must be stored in a refrigerator that meets this criterion.

## 11 Sample and Data Management

11.1 Data management consists of samples logged into the LIMS, documentation of unusual occurrences and their resolutions, creation of data packages (monthly, amendments, and special projects) for peer review and management approval, submittal of data to clients, and archival procedures for sample media and respective chains of custody. Program and maintenance notebooks and/or logbooks are to be kept with the instrumentation at all times.

- 11.2 Sample and data management follow procedures outlined in the QCM. The LIMS Manual describes data management procedures as they pertain to LIMS for this SOP. Additionally, SAS14 and this SOP describe sample and data management as they pertain to Method 310.
- 11.3 Information that has been designated as confidential, proprietary, or trade secrets must be maintained in a locked file cabinet in a secure area. Access to this file cabinet is subject to management approval.

## **12 Calculations**

- 12.1 LIMS automatically performs calculations.
- 12.2 For equations relating to calculation of VOC content, see Method 310.

## **13 References**

- 13.1 Method 310 Determination of Volatile Organic Compounds (VOC) in Consumer Products and Reactive Organic Compounds (ROC) in Aerosol Coating Products, May 25, 2018
- 13.2 SAS01 Standard Operating Procedure for the Total Volatile Measurement of Consumer Products
- 13.3 SAS02 Standard Operation Procedure for the Measurement of Ammonium Ion in Aqueous Consumer Products using Ion Chromatography
- 13.4 SAS03 Standard Operating Procedure for Water Determination in Consumer Products Using Karl Fischer (KF) Drying Oven
- 13.5 SAS04 Standard Operating Procedure for Water Determination in Consumer Products Using Gas Chromatography
- 13.6 SAS05 Standard Operating Procedure for the Determination of Compounds in Aerosol Consumer Product Propellant by Gas Chromatography
- 13.7 SAS06 Procedure for the Qualitative Determination of Compounds in Consumer Products by Headspace Gas Chromatography/Mass Spectrometry
- 13.8 SAS07 Standard Operating Procedure for the Determination of Exempt and Non-Exempt Compounds Generally Found in Consumer Products by Gas Chromatography-FID
- 13.9 SAS09 Standard Operating Procedure for the Determination of Boiling Point Distribution in Consumer Products by Gas Chromatography
- 13.10 SAS14 Standard Operating Procedure for Consumer Product Sample



Preparation

- 13.11 NLB Laboratory Quality Control Manual, September 17, 2018
- 13.12 MLD076 Standard Operating Procedure Preparation of Northern Laboratory Branch's Standard Operating Procedures, Revision 0.0
- 13.13 NLB Chemical Hygiene Plan, June 2018 (or most current version)
- 13.14 Consumer Products Database Special Analysis Section (Oracle Database and Applications Manual for LIMS)

**14 Revision History**

	<b>Date</b>	<b>Updated Revision</b>	<b>Original Procedure</b>
<b>1</b>	<b>Description:</b> New SOP for Sample Batch Management and Reporting, Revision 0.0		
	August 5, 2019	Procedures for sample batch management and reporting under Method 310	None