



**Cooperation Centre for Scientific Research
Relative to Tobacco**

**Routine Analytical Chemistry
Sub-Group**

CORESTA Guide N° 24
Sample Handling of
Mentholated Cigarettes and Cut Filler

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CORESTA TECHNICAL GUIDE N° 24

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Technical Guide for Sample Handling of Mentholated Cigarettes and Cut Filler

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1. Introduction

This Technical Guide for the sample handling of mentholated cigarettes and cut fillers has been developed by the CORESTA Routine Analytical Chemistry (RAC) Sub-Group to provide guidance to the tobacco industry and independent testing laboratories.

The appropriate storage and preparation of the samples is one of the most important factors with regard to the achievement of representative and reproducible test results. A laboratory can only produce high quality results if the integrity of samples is maintained.

Appropriate sample handling, (i.e., storage and preparation) prior to analysis is important to ensure representative analytical results. It is important to ensure that the passage of a sample through the laboratory's analytical system is fully documented and corresponds to each laboratory's relevant Standard Operating Procedure (SOP).

2. Field of Application

This Technical Guide is applicable for the sample handling of mentholated cigarettes and cut filler of mentholated cigarettes before analysis and also includes guidance for collection of sealed pack samples including mentholated cigarettes.

The applicability of this Guide to mentholated cigarettes with filters containing any adsorbents (e.g. charcoal) is not validated.

3. Terms and Definitions

3.1 Conditioning atmosphere

The conditioning atmosphere shall be as follows:

- temperature (22 ± 1) °C;
- relative humidity (60 ± 3) %.

3.2 Test atmosphere

The test atmosphere shall be the same as the conditioning atmosphere but wider tolerances are permissible as follows:

- temperature (22 ± 2) °C;
- relative humidity (60 ± 5) %.

Refer to ISO 3402, *Tobacco and tobacco products — Atmosphere for conditioning and testing* for details.

4. Purpose

The objective of this guide is to describe the sample handling process after the sealed pack sample of mentholated cigarettes has reached the laboratory and also to recommend general guidance for collection of sealed pack samples of mentholated cigarettes. It is difficult to recommend a guide for sample handling that will address every possible situation. The objective of sample handling is to minimize sample deterioration and to reduce variability in analytical results. For example, the elapsed time between sampling and testing will affect sampling and handling parameters.

5. Sampling

Menthol can be applied on different parts of the product or of the packaging. In general, it is known that menthol is inhomogeneously distributed in a cigarette just after making and packing the cigarettes. When menthol is applied to the cut filler only, it might be necessary to allow the menthol to equilibrate in a sealed pack for at least five weeks to obtain representative and reproducible test results by the analysis of menthol in cut filler or tobacco rod.

Each laboratory shall assess equilibration time for menthol when stored by a different sealed material or under different conditions.

It is recommended that after the equilibrated samples have been collected, they shall be packed securely with adequate protection against damage, stored at ambient temperature and sent to the laboratory by the most expeditious means available. The amount of each sample needed is related to the requested analysis.

6. Sample Preparation and Storage

6.1 Sample storage

After arrival at the laboratory, but before analysis, the sealed pack samples of mentholated cigarettes shall be stored in such a way as to avoid loss of menthol, and the possible contamination of non-mentholated products.

Menthol also diffuses slowly out of the packs, therefore it is recommended to analyze menthol in sealed pack samples within three months from the day of production after the menthol equilibration in the pack.

6.2 Sample preparation

Conditioning of the mentholated cigarettes cannot be carried out as usual according to ISO 3402 due to the sublimation of menthol.

During sample preparation for menthol analysis, test samples of mentholated cigarettes and cut filler of mentholated cigarettes shall be prepared as quickly as possible on the day of analysis in order to minimize loss of menthol. After a sealed pack sample is opened, but before starting extraction, preparation (taking out mentholated cigarettes from a pack, slitting them, separating them, putting them into extraction vessel, pipetting extraction solvent into extraction vessel and so on) shall be completed within one hour when it is carried out at the test atmosphere. If it is difficult to complete all procedures of this preparation in one hour, the mentholated cigarettes taken out from the packs may be kept in a closed container until they are slit. However, the maximum storage time in these containers shall not exceed four hours.