

# ISO 23923:2020 (E)

## Cigarettes — Determination of selected volatile organic compounds in the mainstream smoke of cigarettes with an intense smoking regime — Method using GC/MS

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Principle
5	Apparatus
6	Reagents
7	Preparation
7.1	Preparation of glassware
7.2	Preparation of standards
7.2.1	General
7.2.2	Preparation of internal standard spiking solution
7.2.2.1	Internal standard stock solution
7.2.2.2	Internal standard spiking solution
7.2.2.3	Storage
7.2.3	Preparation of working standards for isoprene, acrylonitrile, benzene, and toluene
7.2.3.1	Primary isoprene, acrylonitrile, benzene and toluene stock solutions
7.2.3.2	Secondary stock solution (mixture of isoprene, acrylonitrile, benzene and toluene primary stock solutions)
7.2.3.3	Calibration standard solutions (for isoprene, acrylonitrile, benzene and toluene)
7.2.3.4	Storage
7.2.4	Preparation of working standards for 1,3-butadiene
7.2.4.1	Primary 1,3-butadiene stock solution
7.2.4.2	Secondary 1,3-butadiene stock solution
7.2.4.3	Determination of secondary 1,3-butadiene stock concentration
7.2.4.4	1,3-butadiene calibration standard solutions
7.2.4.5	Storage
8	Sampling
9	Tobacco product preparation
10	Sample generation — Smoking of cigarettes
10.1	General
10.2	Smoking machine setup
10.3	Smoking
10.3.1	General
10.3.2	Linear smoking
10.3.3	Rotary smoking
11	Sample analysis
11.1	Preparation of sample
11.2	Determination

11.2.1	GC-MS operating conditions
11.2.2	Calibration
11.2.3	Calculation
12	Repeatability and reproducibility
12.1	General
12.2	Results of the 2012 collaborative study
13	Test report
Annex A	(informative) Examples of chromatograms

Page count: 17