

INDONESIA

**MINISTER OF INDUSTRY AND TRADE OF ROI
NUMBER: 62/MPP/Kep/2/2004**

**REGARDING
METHOD OF TESTING OF NICOTINE AND TAR CONTENT IN CIGARETTE**

MINISTER OF INDUSTRY AND TRADE OF ROI,

Considering:

- a. That to unify method of testing of nicotine and tar content in cigarette as an implementation of Government Regulation Number 19 Year 2003 regarding Health Protection Against Cigarette, it is deemed necessary to issue provision on standard method of testing of tar and nicotine content in cigarette.
- b. Therefore it is deemed necessary to issue a decree of Minister of Industry and Trade accordingly.

In view of:

1. Law Number 5 Year 1984 on Industry (State Gazette Year 1984 Number 22 Supplement to State Gazette Number 3274);
2. Law Number 23 Year 1992 on Health (State Gazette Year 1992 Number 100 Supplement to State Gazette Number 3495);
3. Law Number 8 Year 1999 regarding Consumer Protection (State Gazette Year 1999 Number 42 Supplement to State Gazette Number 3821);
4. Government Regulation Number 17 Year 1986 regarding Authority for Regulating, Assisting and Developing Industry (State Gazette Year 1986 Number 23 Supplement to State Gazette Number 3330);
5. Government Regulation Number 102 Year 2000 regarding National Standardization System (State Gazette Year 2000 Number 199 Supplement to State Gazette Number 4020);
6. Government Regulation Number 58 Year 2001 regarding Assistance and Supervision of Consumer Protection (State Gazette Year 2001 Number 103 Supplement to State Gazette Number 4126);
7. Government Regulation Number 19 Year 2003 regarding Health Protection Against Cigarette (State Gazette Year 2003 Number 36 Supplement to State Gazette Number 4276);
8. Presidential Decree Number 228/M Year 2001 regarding Formation of the Gotong Royong Cabinet;
9. Presidential Decree of The Republic of Indonesia Number 102 Year 2001 regarding Position, Duty, Function, Authority, Re; Composition of Organization and Working Procedure of Ministry;
10. Decree of Minister of Industry and Trade Number 753/MPP/Kep/11/2002 National Standardization System

DECIDE

Stipulate:

Decree of Minister of Industry and Trade on Guideline Procedure of Testing of Nicotine and Tar content in Cigarette

Article 1

In this decree:

1. Cigarette is any products which result from production of tobacco consisting of clove cigarette and white cigarette, produced from raw materials *Nicotiana Tabacum*, *Nicotiana Rustica* and other species or their synthetic products which contain nicotine and tar with or without additional ingredients.
2. Nicotine is a substance or compound substance composed of pirrolidin which is found in *Nicotana Tabacum*, *Nicotana Rustica* and other species or their synthetics which cause addiction.
3. Tar is compound substance composed of pilonuklir hydrocarbon aromatics which has carcinogenic effect.
4. Producer is any individual or company which produces cigarette.
5. Importer is any individual or company which brings in cigarette into Indonesian territory.
6. Minister is Minister of Industry and Trade

Article 2

1. Any producer and/ or importer shall test content of nicotine and tar in cigarette that they produce or import.
2. Result of test of nicotine and tar content referred to in dictum 1 must be put on cigarette label at a place that enable consumers to easily read it.

Article 3

1. The testing of nicotine and tar content referred to in article 2 shall be conducted at cigarette testing laboratory which has been accredited or appointed by minister
2. The list of cigarette testing laboratory appointed by minister referred to in dictum 1 is enclosed in appendix I of this decree.

Article 4

In conducting a test on nicotine and tar content of cigarette, the cigarette testing laboratory referred to in article 3 shall apply procedure stated in the appendix II of this decree

Article 5

1. Monitoring of the testing of nicotine and tar content of cigarette on import and production process is conducted periodically or at any time when it is necessary to conduct such a testing.
2. Monitoring of the testing at production process referred to in dictum 1 is performed by Directorate General of Chemical and Agricultural Industry or Directorate General of Small and Medium-Size Industry according to the authorities of the respected agencies.
3. Monitoring of the testing on imported cigarette referred to in dictum 1 is performed by Directorate General of Foreign Trade

Article 6

This decree shall come into effect on the date of stipulation

Stipulated in Jakarta

On February 17, 2004

MINISTER OF INDUSTRY AND TRADE ROI

RINI M SUMARNO SOEWANDI

Copy of this decree is sent to:

1. Minister of Health of ROI
2. First Echelon Officials of Ministry of Industry and Trade
3. Chairman of National Standardization Board
4. Provincial Head of Industry ad Trade throughout Indonesia
5. Municipal/City Head of Industry and Trade throughout Indonesia
6. Chief Bureau of Legal Affairs and Organization Ministry of Industry and Trade
7. Chief of Standardization and Accreditation
8. Chief of Data and Information
9. Archives

APPENDIX I DECREE MINISTER OF INDUSTRY AND TRADE OF ROI**NUMBER: 62/MPP/Kep/2/2004****Dated : 17 FEBRUARY 2004****LIST OF LABORATORY APPOINTED AS
CIGARETTE TESTING LABORATORY**

NO	LABORATORY	ADDRESS
1	Food and Drug Center Laboratory of Testing, National Food and Drug Agency	Jl. Percetakan Negara No. 23 Jakarta Pusat Telp. (021) 4245075, 4245150, Fax. (021) 420 1427
2.	PT. HM Sampoerna Tbk.	Raya Surabaya – Malang Km 51,4 Sukorejo, Pasuruan 67161, Telp. (0343) 636762, Fax (0343) 636764
3.	PT. Gudang Garam Tbk	Desa Sumber Suko Gempol Kec. Gempol, Pasuruan Telp. (0343) 638888, Fax (0343) 638662.
4.	PT. Djarum Kudus	Jl. A Yani No. 28 Kudus Telp. (0291) 437901, Fax. (0291) 431809.
5.	PT. Gelora Djaja	Jl. Bundaran No. 9, Tandés, Surabaya 60185, Telp. (031) 7493556, Fax. (031) 7491173
6.	PT. Nojorono Tobacco International	Jl. Jend. Sudirman 86B, Kudus 59311, Telp. (0291) 439161, Fax (0291)432464.
7.	PT. Bentoel	Jl. Raya Karanglo Singasari, Malang 65153, Telp. (0341) 490000, Fax. (0341)489424.
8.	PT. Sumatera Tobacco Trading Company (STTC)	Jl. HOS Cokroaminoto No. 11 Medan-20352, Pematang Siantar Telp. (061) 4515214, Fax. (061) 4524968
9.	PT. BAT Indonesia	Jl. Pasuketan No. 1 Cirebon -45111 Telp. (0231) 205771-3, Fax. (0231) 204846

**MINISTER OF INDUSTRY AND TRADE ROI
RINI M SUMARNO SOEWANDI**

APPENDIX II DECREE MINISTER OF INDUSTRY AND TRADE OF ROI

NUMBER: 62/MPP/Kep/2/2004

Dated : 17 FEBRUARY 2004

PROCEDURE OF TESTING OF NICOTINE AND TAR CONTENT OF CIGARETTE

A. PROCEDURE OF TESTING OF NICOTINE AND TAR CONTENT OF CLOVE CIGARETTE

1. Scope of Area of Testing:
Included in this guideline procedure are reference, definition, sample and method of testing
2. Reference
 - a. ISO 10315 - 2000, Coresta Method No.7, 1991. Cigarettes Determination of nicotine in smoke condensates - gas chromatographic method;
 - b. ISO 10362 - 1 - 1999, Coresta Method No.8, 1991. Cigarettes Determination of water in smoke condensates - part 1 - gas chromatographic method;
 - c. ISO 3308 - 2000, Coresta Method No. 22, 1991. Routine analytical cigarette - smoking machine -Definitions and-standard conditions;
 - d. ISO 4387 - 2000, Coresta Method No. 23, 1991. Cigarettes Determination of total and nicotine - free dry particulate matter using a routine analytical smoking machine.
3. Definition
 - 3.1. Clove Cigarette
Clove cigarette is an Indonesia's unique product made from cut tobacco mixed with clove and saccs and other allowable ingredients packed in any kind of packaging materials.
 - 3.2. Handmade Cigarette
Handmade cigarette is a cigarette produced manually using traditional rolling equipments. It has conical shape and without filter.
 - 3.3. Handmade Filter Cigarette
Handmade filter cigarette is a cigarette produced manually, having un-conical shape and a filter.
 - 3.4. Clove Machine Cigarette
Clove machine cigarette is a cigarette which is produced by machine with or without filter.
4. Preparing Sample
 - 4.1. Prepare the sample as follows:
 - a. Clove Filter Cigarette
Take 6 pieces of clove filter cigarette randomly from each of ten packs of sample. Total sample to be taken is 60 pieces.
 - b. Clove Cigarette (Without Filter)

Take 3 pieces of clove cigarette from each of the ten packs of sample. Total sample to be taken is 30 pieces.

- 4.2. Put the clove cigarette sample in the conditioning chamber at temperature of $(22\pm 1)^{\circ}\text{C}$ and humidity $(60\pm 5)\%$ for 48 hours.

5. Method of Testing

5.1. Principle

Light up the cigarette and exhale it with exhaling machine. The smoke that comes out of the burning cigarette is then stored at Cambridge Pad and is defined as Total Particulate matter (TPM).

Coresta content is calculated by reducing the TPM with water and nicotine content of the cigarette sample. Tar content is calculated by reducing TPM with water, nicotine and Eugenol.

Below is mathematical equation:

$$\text{Tar}_{\text{CORESTA}} = \text{TPM} - (\text{Water} + \text{Nicotine})$$

$$\text{Tar}_{\text{cigarette}} = \text{TPM} - (\text{Water} + \text{Nicotine} + \text{Eugenol})$$

Or

$$\text{Tar}_{\text{Clove Cigarette}} = \text{Tar}_{\text{CORESTA}} - \text{Eugenol}$$

5.2. Testing Equipment

Equipment used for testing tar and nicotine content is smoking machine, rotary or linear type based on ISO 3308, 2000 and Coresta Method No. 22, 1999. Details of the equipment is as follows:

- a. Duration Puff
Duration Puff 2.0 second with standard deviation not exceeding 0.02 second.
- b. Volume Puff
Volume Puff 35 ml with standard deviation not exceeding 0.3 ml
- c. Frequency Puff
Frequency Puff is one puff per 60 second with standard deviation not exceeding 0.5 second.
- d. Puff Profile
Puff profile is bell shaped
- e. Puff Number
Every puff shall be calculated and registered carefully and counted, rounded up 1 decimal after the comma according to the duration of the puff.
- f. Cigarette Holder
Cigarette holder must cover 9 mm-0.5 mm from the but end of the cigarette

5.3. Determining Total Particulate Matter (TPM)

TPM is determined according to procedures stated in 180 4387 : 2000 (E) Cigarettes Determination of total and Nicotine-Free Dry Particulate Matter(NFDPM) using a routine analytical smoking machine (Dictum 2d)

5.4. Determining Nicotine, Water and Eugenol Content in Cigarette Smoke Condensates

- a. Dissolve the Cambridge Pad obtained from the smoking process in a 20 ml Isopropanol (for disc with 44 mm diameter) and 50 ml Isopropanol (for disc with 92 mm diameter) so that the disc is fully soaked and then shake the disc for 20 minutes (extraction process)
- b. Determine nicotine, water and Eugenol content in cigarette smoke condensates according to procedure stated in ISO 10315 : 2000 Cigarettes - Determination of Nicotine in smoke condensates - Gas Chromatographic method (dictum 2a).
- c. Determine water content based on procedures stated in ISO 10362-1 : 1999 Cigarettes - Determination of water in smoke condensates - Part 1 Gas Chromatographic method (dictum 2b)
- d. Determine Eugenol and nicotine content using GC internal standard method (18T) according to ISO 10315. 2000 Cigarettes - Determination of Nicotine in smoke condensates - Gas Chromatographic method (dictum 2a).
- e. The result of test (in mg) is divided by the number of cigarette sample. The final result of the testing is quoted in mg/cigarette.

5.5. Determining Tar Coresta Content

Tar Coresta Content in cigarette smoke condensates is calculated by subtracting water and nicotine (5.4) from TPM (5.3). Mathematical equation is:

Tar Coresta = TPM - (Nicotine + Water)

Tar CORESTA is quoted in mg / cigarette

5.6. Determining Tar Content

Tar content in cigarette sample is calculated by subtracting Eugenol (5.4) from Tar Coresta (5.5)

Tar Content = Tar Coresta – Eugenol

Tar content is quoted in mg/ cigarette

5.7. Tolerance of Tar and Nicotine Content

The result of test of tar and nicotine content must be put on the label with tolerance level of $\pm 20\%$.

B. METHOD OF TESTING OF TAR AND NICOTINE CONTENT OF WHITE CIGARETTE

1. Scope of Testing

Included in this guideline procedure are reference, definition, sample and method of testing of tar and nicotine contents of white cigarette

2. Reference

- a. ISO 10315 - 2000, Coresta Method No.7, 1991. Cigarettes – Determination of nicotine in smoke condensates -Gas chromatographic method;
- b. ISO 10362 - 1 -1999, Coresta Method No.8,1991. Cigarettes Determination of water in smoke condensates - part 1 – gas chromatographic method;
- c. ISO 3308 - 2000, Coresta Method No. 22, 1991. Routine analytical cigarette - smoking machine - Definitions and standard condition;

d. ISO 4387 - 2000, Coresta Method No. 23, 1991. Cigarettes – Determination of total and nicotine - free dry particulate matter using a routine analytical smoking machine.

3. Definition

White cigarette is a cigarette with or without filter made from Virginia Irish tobacco or other types of tobacco without clove, rolled with white cigarette paper added with allowable ingredients.

4. Preparing Sample

4.1. Take 6 pieces of white cigarette randomly from each of ten packs of sample. Total Sample to be taken for determining tar and nicotine content is 60 pieces.

4.2. Put the white cigarette sample in the conditioning chamber at temperature of $(22\pm 1)^{\circ}\text{C}$ and humidity $(60\pm 5)\%$ for 48 hours.

5. Method of Testing

5.1. Principle

Light up the white cigarette sample and exhale it with exhaling machine. The smoke that comes out of the burning cigarette is then stored at Cambridge Pad and is defined as Total Particulate matter (TPM) .

Tar Coresta is calculated by reducing the TPM with water and nicotine content of the white cigarette sample.

$\text{Tar}_{\text{CORESTA}} = \text{TPM} - (\text{Water} + \text{Nicotine})$

5.2. Testing Equipment

The equipment used for testing tar and nicotine content is smoking machine, rotary or linear type based on ISO 3308, 2000 and Coresta Method No. 22, 1999. Details of the equipment is as follows:

a. Duration Puff

Duration Puff 2.0 second with standard deviation not exceeding 0.02 second.

b. Volume Puff

Volume Puff 35 ml with standard deviation not exceeding 0.3 ml

c. Frequency Puff

Frequency Puff is one puff per 60 second with standard deviation not exceeding 0.5 second.

d. Puff Profile

Puff Profile is bell shaped

e. Puff Number

Every puff shall be calculated and registered carefully and counted, rounded up 1 decimal after the comma according to the duration of the puff.

f. Cigarette Holder

Cigarette holder must cover 9 mm-0.5 mm from but end of the cigarette

5.3. Determining Total Particulate Matter (TPM)

TPM is determined according to procedures stated in ISO 4387 : 2000 (E) Cigarettes Determination of total and Nicotine-Free Dry Particulate Matter(NFDPM) using a routine analytical smoking machine (Dictum 2d)

5.4. Determining Nicotine and Water in Cigarette Smoke Condensates

- a. Dissolve the Cambridge Pad obtained from the smoking process in a 20 ml Isopranol for disc with 44 mm diameter and 50 ml for disc with 92 mm diameter until the disc is fully soaked and then shake the disc for 20 minutes (extraction process)
- b. Determine nicotine and water content in white cigarette smoke condensates according to procedures stated in ISO 10315 : 2000 Cigarettes - Determination of Nicotine in smoke condensates - Gas Chromatographic method (dictum 2a).
- c. Determine water content based on procedures stated in ISO 10362-1 : 1999 Cigarettes - Determination of water in smoke condensates - Part 1 Gas Chromatographic method (dictum 2b)
- d. Result of the test (in mg) is divided by the number of white cigarette sample. Result of testing is presented in mg/cigarette.

5.5. Determining Tar Coresta Content

Tar Coresta Content in white cigarette smoke condensates is calculated by subtracting water content and nicotine content (5.4) from TPM (5.3).
Mathematical equation is:

Tar Coresta = TPM - (Nicotine + Water)

Tar CORESTA is presented in mg / cigarette

5.6. Tolerance of Tar and Nicotine Content

The result of test of the tar and nicotine content must be put on the label with tolerance level of $\pm 15\%$.

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