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Department of Agriculture  
**SUGAR REGULATORY ADMINISTRATION**  
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February 15, 2019

**MEMORANDUM CIRCULAR No. 1**  
Series of 2019

**TO : ALL SUGAR MILLS, SUGAR REFINERIES and OTHERS CONCERNED**

**SUBJECT : PRESCRIBING NEW SETS OF STANDARD FOR RAW CANE SUGAR and WHITE SUGAR**

All raw sugar mills and refineries are hereby advised on the approval of the *Philippine National Standards (PNS) for Raw Cane Sugar (PNS/BAFPS 81:2018)* and the *Philippine National Standards White Sugar (PNS/BAFPS 82:2018)*.

Said Standards were finalized considering the old PNS, the existing Codex document and texts, as well as different government regulations. Sugar stakeholders and advocacy groups had been duly consulted and their comments accounted for in the subject standard. These standards had already been submitted to the BPS- DTI, the repository for all Philippine National Standards.

Henceforth, all essential composition and quality factors, specifications as produced, and methods of analysis for both raw cane and white sugar covered by these standards per annexes hereto attached must be adhered to as prescribed.

All mills and refineries are directed to advise their respective quality control laboratories over these prescriptions.

Please be guided accordingly.

**HERMENEGILDO R. SERAFICA**  
Administrator

Attachments: a/s

OK  
2/21/19

**Foreword**

The Philippine National Standard for the Specification of Raw Cane Sugar (PNS/BAFPS 81:2010) was revised in 2010 in order to aid in boosting the local sugar industry and ensure that the locally produced and traded sugars meet current international standards for safety and quality. The Standard intended to provide specification of raw cane sugar intended for human consumption.

In 2016, the Sugar Regulatory Administration (SRA) requested the assistance of the Bureau of Agriculture and Fisheries Standards (BAFS) to lead the revision of PNS/BAFPS 81:2010 in order to update the laboratory procedures for the analysis of sugar.

A Technical Working Group (TWG) for the revision of the said standard was created through Special Order No. 239 Series of 2017 with representations from the Department of Agriculture (DA) namely BAFS and SRA and private sector.

This document was drafted in accordance with the editorial rules of the BPS Directives, Part 3.

This Standard cancels and repeals PNS/BAFPS 81:2010.

# **PHILIPPINE NATIONAL STANDARD**

**PNS/BAFS 81:2018  
ICS 67.180.10**

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## **Raw cane sugar - Specification**



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## 1 Scope

This standard applies to raw cane sugar or raw sugar intended for human consumption. It also includes raw cane sugar sold for refining or further processing as raw material or ingredient in foodstuffs.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

*Bureau of Agriculture and Fisheries Standards (BAFS). Philippine National Standard for Raw Cane Sugar (PNS/BAFPS 81:2010 ICS 67.180.10).*

*Codex Alimentarius Commission. Codex Standard for Sugars (Codex Stan 212-1999, Amd.1-2001)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### raw cane sugar

also known as raw sugar, is partially purified sucrose, which is crystallized from partially purified cane juice, but which involves centrifugation, and which is characterized by sucrose crystals covered with a film of cane molasses. The content of sucrose by weight, in dry state, corresponds to a minimum polarimeter reading of 97.4 °Z and less than 99.5 °Z.

## 4 Essential composition and quality factors

Raw cane sugar should conform with the essential composition and quality factors specified in Table 1.

**Table 1 – Essential composition and quality factors of raw cane sugar**

Composition and quality factors	Specification as produced
Polarization, °Z,	97.4 to < 99.5
Safety factor, maximum	0.3
Color (ICUMSA Units), maximum	5000
Dextran, mg/kg, maximum	400
Sulphur dioxide, mg/kg, maximum	20

**Raw cane sugar - Specification**

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**5 Contaminants****5.1 Heavy metals**

Raw cane sugar shall be free from heavy metals in amounts which may represent a hazard to human health.

Raw cane sugar shall comply with the heavy metal limits established by the Codex Alimentarius Commission (CAC) for this commodity.

**5.2 Pesticide residues**

Raw cane sugar shall comply with those maximum residue limits established by the Codex Alimentarius Commission (CAC) for this commodity.

**6 Hygiene**

It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969 Rev. 4-2003) and its equivalent PNS and other relevant Codes of Hygienic Practices. Provisions of Department of Health (DOH) Administrative Order No. 153 s. 2004: Revised Guidelines on Current Good Manufacturing Practices, Packing, Repacking, or Holding Food, including Inspection Checklist for Sugar Millers/Refiners should apply.

Raw cane sugar should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997 Rev. 2013) and Food and Drug Administration (FDA) Circular 2013-010: Revised Guidelines for the Assessment of Microbiological Quality of Processed Foods.

**7 Labelling**

In addition to the provisions of the General Standard for the Labelling of Pre- packaged Foods (CODEX STAN 1-1985, Rev 2010), provisions of Republic Act (RA) 7394: Consumer Act of the Philippines, RA 10611: Food Safety Act of the Philippines, DOH AO No. 2014-0030: Revised Rules and Regulation Governing the Labeling of Prepackaged of Food Products Distributed in the Philippines and other existing FDA rules, regulations and resolutions, the following specific provisions shall apply:

**7.1 The name of food**

The product covered by this standard must conform to the definition given for that product in Section 3 of the standard.

**8 Packaging**

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**8.1** Raw cane sugar intended for direct consumption or as ingredients for foodstuffs shall be directly bagged and properly labeled.

**8.2** Raw cane sugar as produced for direct consumption shall be packed in new, clean sound polypropylene bags lined with polyethylene film, or equivalent packaging or bulk containers. Containers should be of sufficient bursting strength and durability to ensure complete protection during transit and storage under normal conditions.

## 9 Methods of analysis

Raw cane sugar should be analyzed based on the methods listed in Table 2.

**Table 2 – Methods of analysis for raw cane sugar**

<b>Composition and quality factors</b>	<b>Methods of analysis</b>
Polarization	ICUMSA GS 1/2/3/9-1(2011) Polarimetry  ICUMSA GS1/2/3-2 (2009) Polarimetry without Wet Lead Clarification
Safety factor	ICUMSA GS 2/1/3/9-15(2007) Gravimetry
Color	ICUMSA GS1/3-7 (2011) Solution Color at pH 7.0
Dextran	ICUMSA GS1/2/9-15(2015) Modified Alcohol Haze Method
Sulphur dioxide	ICUMSA GS 2/1/7/9-33(2011) Rosaniline Colorimetric Method

**Bibliography**

Codex Alimentarius Commission. General Standard for the Labelling of Prepackaged Foods (Codex Stan 1-1985, Rev. 2010)

Codex Alimentarius Commission. Codex Standard for General Methods of Analysis and Sampling (Codex Stan 234-1999 Rev. 2016)

Codex Alimentarius Commission. Codex Principles for Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997 Rev. 2013)

Codex Alimentarius Commission. Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969 Rev. 4-2003)

Department of Health (DOH). 2014. Administrative Order No. 2014-0030: Revised Rules and Regulation Governing the Labelling of Prepackaged of Food Products Distributed in the Philippines

Department of Health (DOH). 2004. Administrative Order No. 153 s. 2004, Revised Guidelines on Current Good Manufacturing, Packing, Repacking or Holding Food

Food and Drug Administration (FDA). 2013. FDA Circular 2013-010: Revised Guidelines for the Assessment of Microbiological Quality of Processed Foods

International Commission for Uniform Methods of Sugar Analysis (ICUMSA) Methods Book 2015

Republic Act 7394. The Consumer Act of the Philippines

Republic Act 10611: The Food Safety Act of 2013

Republic Act 10864: An Act Defining Raw Sugar or Raw Cane Sugar, Amending Section 109 (A) and (F) of the National Internal Revenue Code of 1997, As Amended, and for Other Purposes

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# PHILIPPINE NATIONAL STANDARD

PNS/BAFS 82:2018  
ICS 67.180.10

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## White sugar - Specification



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**Foreword**

The Philippine National Standard for the Specification of White Sugar (PNS/BAFPS 82:2010) was revised in 2010 in order to aid in boosting the local sugar industry and ensure that the locally produced and traded sugars meet current international standards for safety and quality. The Standard intended to provide specification of white sugar intended for human consumption.

In 2016, the Sugar Regulatory Administration (SRA) requested the assistance of the Bureau of Agriculture and Fisheries Standards (BAFS) to lead the revision of PNS/BAFPS 82:2010 in order to update the laboratory procedures for the analysis of sugar.

A Technical Working Group (TWG) for the revision of the said standard was created through Special Order No. 239 Series of 2017 with representations from the Department of Agriculture (DA) namely BAFS and SRA and private sectors.

This document was drafted in accordance with the editorial rules of the BPS Directives, Part 3.

This Standard cancels and repeals PNS/BAFPS 82:2010.

## 1 Scope

This standard applies to white sugar (premium grade, standard grade and plantation white sugar) intended for human consumption without further processing. It includes white sugars sold directly to the final consumer and used as ingredients in foodstuffs.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

*Bureau of Agriculture and Fisheries Standards (BAFS). Philippine National Standard for White Sugar (PNS/BAFPS 82:2010 ICS 67.180.10).*

*Codex Alimentarius Commission. Codex Standard for Sugars (Codex Stan 212-1999, Amd.1-2001)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **white sugar, premium grade**

purified and crystallized sucrose (saccharose) with a polarization not less than 99.8°Z

### 3.2

#### **white sugar, standard grade**

purified and crystallized sucrose (saccharose) with a polarization not less than 99.7°Z

### 3.3

#### **plantation or mill white sugar (PMWS)**

purified and crystallized sucrose (saccharose) with a polarization not less than 99.5°Z

## 4 Essential composition and quality factors

White sugar should conform with the following essential composition and quality factors as specified in Table 1.

**Table 1 – Essential composition and quality factors of white sugar**

Composition and quality factors	White sugar		PMWS
	Premium grade	Standard grade	
Polarization, °Z	≥ 99.8	≥ 99.7	≥ 99.5
Conductivity ash, % m/m	≤ 0.03	≤ 0.06	≤ 0.1
Reducing sugar, % m/m	≤ 0.04	≤ 0.08	≤ 0.1
Loss on drying, % m/m	≤ 0.04	≤ 0.08	≤ 0.1
Color (ICUMSA units)	≤ 50	≤ 100	≤ 150

## 5 Food additives

Only food additive listed below may be used and only within the limits specified. Other additives from the Codex General Standard for Food Additives (GSFA) (Codex Stan 192-1995 rev. 2016) and/or Bureau of Food and Drugs (BFAD), currently known as Food and Drug Administration (FDA), Circular 2006-016: Updated List of Food Additives approved list may be used.

Wherever possible levels shall be as low as technologically achievable.

**Table 2- Maximum permitted level of sulfur dioxide**

Sugar	Maximum permitted level mg/kg
White sugar, premium and standard grade	15
Plantation or mill white sugar	20

## 6 Contaminants

### 6.1 Heavy metals

White sugar shall comply with the maximum limits established by the Codex Alimentarius Commission.

### 6.2 Pesticide residues

White sugar shall comply with those maximum residue limits established by the Codex Alimentarius Commission for this commodity.

## 7 Hygiene

It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969 Rev. 4-2003) and its equivalent PNS and other relevant Codes of Hygienic Practices. Provisions of Department of Health (DOH) Administrative Order No. 153 s. 2004: Revised Guidelines on Current Good Manufacturing Practices, Packing, Repacking, or Holding Food, including Inspection Checklist for Sugar Millers/Refiners should apply.

White sugar should comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997 Rev. 2013) and Food and Drug Administration (FDA) Circular 2013-010: Revised Guidelines for the Assessment of Microbiological Quality of Processed Foods.

## **8 Labelling**

In addition to the provisions of the General Standard for the Labelling of Pre- packaged Foods (CODEX STAN 1-1985, Rev 2010), provisions of Republic Act (RA) 7394: Consumer Act of the Philippines, RA 10611: Food Safety Act of the Philippines, DOH AO No. 2014-0030: Revised Rules and Regulation Governing the Labeling of Prepackaged of Food Products Distributed in the Philippines and other existing FDA rules, regulations and resolutions, the following specific provisions shall apply:

### **8.1 The name of food**

White sugar must conform to the definition given for that product in Section 3 of the standard.

## **9 Packaging**

White sugar as produced shall be packed in new, clean and sound polypropylene bags lined with polyethylene film, or equivalent packaging or bulk containers. Containers should be of sufficient bursting strength and durability to ensure complete protection during transit and storage under normal conditions.

## **10 Methods of analysis**

White sugar should be analyzed based on the following methods listed in Table 3.

Table 3 - Methods of analysis for white sugar

Composition and quality factors	White sugar	PMWS
Polarization	ICUMSA GS 2/3-1(2011) Polarimetry (Braunschweig Method)	ICUMSA GS 2/3-1(2011) Polarimetry (Braunschweig Method) ICUMSA GS 1/2/3/9-1(2011) Polarimetry
Conductivity ash	ICUMSA GS 2/3/9-17(2011) Conductimetry	ICUMSA GS 2/3/9-17 (2011) Conductimetry  ICUMSA GS 1/3/4/7/8-13 (1994) Conductimetry
Reducing sugar	ICUMSA GS 2/3/9-5 (2011) Titrimetry (Knight and Allen EDTA Method)	ICUMSA GS 2/3/9-5 (2011) Titrimetry (Knight and Allen EDTA Method)
Loss on drying	ICUMSA GS 2/1/3/9-15 (2007) Gravimetry	ICUMSA GS 2/1/3/9-15 (2007) Gravimetry
Color (ICUMSA units)	ICUMSA GS 2/3-10(2011) Spectrophotometric Method	ICUMSA GS 2/3-10(2011) Spectrophotometric Method
Sulfur dioxide	ICUMSA GS 2/1/7/9-33 (2011) Rosaniline Colorimetric Method	ICUMSA GS 2/1/7/9-33 (2011) Rosaniline Colorimetric Method

**Bibliography**

Codex Alimentarius Commission. General Standard for Food Additives (GSFA) (Codex Stan 192-1995 rev. 2016)

Codex Alimentarius Commission. General Standard for the Labelling of Prepackaged Foods (Codex Stan 1-1985, Rev. 2010)

Codex Alimentarius Commission. Codex Standard for General Methods of Analysis and Sampling (Codex Stan 234-1999 Rev. 2016)

Codex Alimentarius Commission. Codex Principles for Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997 Rev. 2013)

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International Commission for Uniform Methods of Sugar Analysis (ICUMSA) Methods Book 2015

Republic Act 7394. The Consumer Act of the Philippines

Republic Act 10611: The Food Safety Act of 2013



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