

# CAMBODIA

## Milled Rice Standards

CS053:2014-Rev.1

# 1. SCOPE

This standard prescribes specifications, required criteria, hygiene, packaging, labeling, sampling and testing methods for milled rice. This standard does not however apply to other products derived from rice (*Oryza sativa L.*) or glutinous rice.

## 2. DEFINITIONS

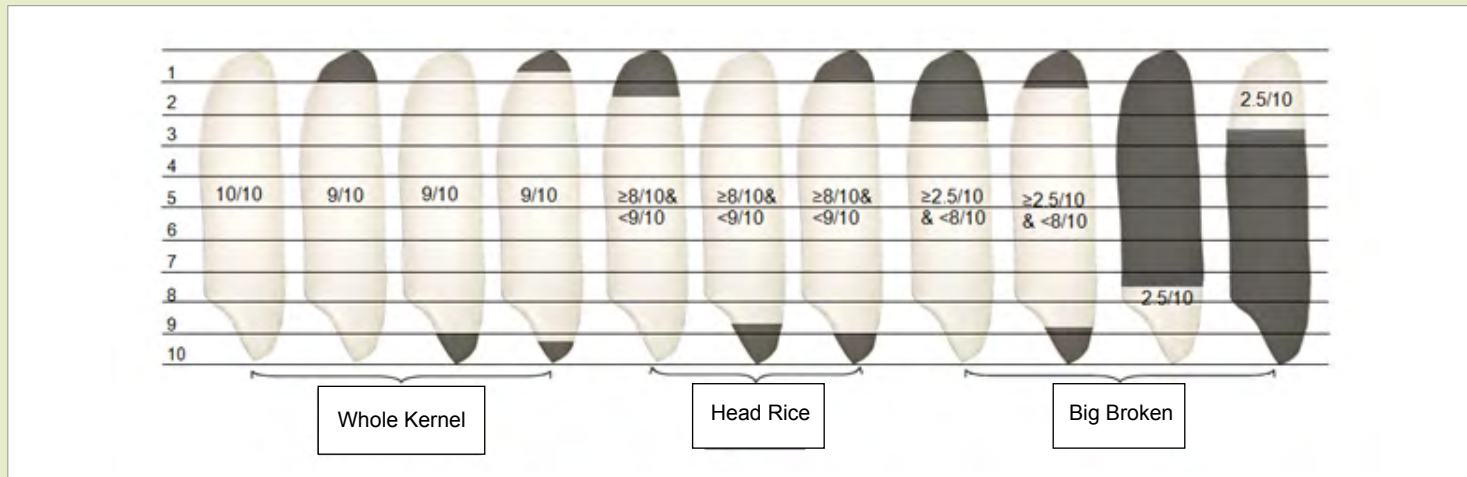
For the purpose of this standard, the following definitions shall apply:

- 2-1 Paddy rice: Rice kernels obtained after threshing.
- 2-2 Specification: Detailed features of rice (milled) rice products
- 2-3 Brown rice: Husked rice obtained by removing the outermost layer (husk) of paddy. It's called Loozain rice, husked rice or cargo rice.
- 2-4 Milled rice: Rice kernel obtained from removing bran layer and germ of the brown rice.
- 2-5 Germ: A reproductive organ that can germinate and grow into a rice plant. It is located at one end of the grain near the pedicel.
- 2-6 Whole kernel: Milled rice with no cracked kernel and not shorter than 9/10 of the kernel. (Figure 2.25)
- 2-7 Head rice: Milled rice with a length equals to or more than 8/10 but shorter than the whole kernel.
- 2-8 Big broken: Fragment of the rice kernel, which is greater than 2.5 portions of whole kernel but shorter than head rice.
- 2-9 Small broken: Fragment of the rice kernel, which can pass through a sieve with round perforations of 1.75 mm in diameter.
- 2-10 Chalky kernel: Rice kernel with opaque surface more than 5/10 of the whole kernel.

- 2-11 Red kernel: Whole or broken kernel of which more than 3/10 of its surface is red-colored.
- 2-12 Red streaked kernel: Whole kernel or part of it with red streaks covering at least 5/10 of the average length of the whole kernel.
- 2-13 Yellow kernel: Whole or broken kernel that appears yellow if compared to the original features of any relevant variety.
- 2-14 Immature kernel: Rice kernel, appearing light green as a result of milling immature paddy rice.
- 2-15 Damaged kernel: Whole or part of kernel that is damaged or discolored due to heat, moisture, insects, fungi, or other factors.
- 2-16 Foreign matter: Substances or materials other than rice or paddy, such as soil, gravel, fragments of panicle, dirt, husk and insect.
- 2-17 Foreign odor: Smell that is not the natural scent of the specified variety.
- 2-18 Moisture content: Percentage of moisture of the rice kernel.
- 2-19 Chemical residues: Traces of chemicals that remain in the rice kernel at any step of rice production, processing and packaging.
- 2-20 Aromatic rice: Types of milled rice that exhibit a natural aroma such as of Phka Rumduol, Phka Rumdeng, Phka Romeat, Sen Pidao...etc.
- 2-21 Extra well milled: Milled rice that has the entire husk, germ and bran layer removed.
- 2-22 Well milled: Milled rice that has husk, germ and bran layer removed but not to the extent as the "Extra well milled rice".
- 2-23 Reasonably milled: Milled rice that has husk and much of the germ removed but not to the extent as "well milled rice".

2-24 Ordinary milled: Milled rice that is obtained by removing husk, part of the germ and the outer layer of bran.

2-25 Figure of milled rice features:



# 3. GRADES AND TYPES OF MILLED RICE

## 3-1 GRADES OF MILLED RICE BY GRAIN LENGTH

3-1-1 Extra long grain: Rice kernel that is equal to or longer than 7 mm.

3-1-2 Long grain: Rice kernel that is equal to or longer than 6.2 mm but shorter than 7 mm.

There are two grades:

- Long grain grade 1: Rice kernel that is equal to or longer than 6.6 mm, but shorter than 7mm

- Long grain grade 2: Rice kernel that is equal to or longer than 6.2 mm, but shorter than 6.6mm

3-1-3 Medium grain: Rice kernel that is equal to or longer than 5.4 mm but shorter than 6.2 mm.

3-1-4 Short grain: Rice kernel that is shorter than 5.4 mm.

## 3-2 GRADES OF MILLED RICE BY DEGREE OF PROCESSING

3-2-1 rice 100% -grade A

3-2-2 rice 100%-grade B

3-2-3	rice 100%	3-2-8	broken rice 25%
3-2-4	broken rice 5%	3-2-9	broken rice 30%
3-2-5	broken rice 10%	3-2-10	broken rice 35%
3-2-6	broken rice 15%	3-2-11	100% broken rice A1- extra super
3-2-7	broken rice 20%	3-2-12	100% broken rice A1- super

### **3-3 TYPES OF MILLED RICE**

- 3-3-1 Premium aromatic rice: Types of milled rice with strong natural scent such as Phka Rumduol, Phka Rumdeng, and Phka Romeat.
- 3-3-2 Aromatic rice: Types of milled rice having a mild natural scent such as Sen Pidao.
- 3-3-3 Premium white rice: Rice kernel with a translucent endosperm and soft consistency when cooked such as of Phka Chan Sen Sar, Riang Chey, CAR 4, and CAR 6...etc
- 3-3-4 White rice: Rice kernel with firm consistency when cooked such as IR 66, and Chulsa...etc

## 4. CRITERIA

4-1 Criteria of milled rice can be determined by the specifications listed in the tables attached.

**TABLE 1: PREMIUM AROMATIC RICE**

Grade of processing	Classification of grain length (%)			Grain composition (%)			Number of paddy rice /kg	Other composition (%)	Number of other types of rice kernel, not exceeding (%)				Milling degree	Purity (%)
	ELG	LG	MG	Whole kernel	Big Broken kernel	Small broken kernel			Damage kernel	Red streaked kernel	Chalky kernel	Yellow kernel		
100% A	≥70	-	≤5	≥60	≤3	≤0.10	1	0.10	0.10	0.10	3	0.1	Extra Well Milled	≥90
100% B	≥60	-	≤5	≥60	≤4	≤0.15	1	0.15	0.30	1.0	3	0.2	Extra Well Milled	
5%	≥40	-	≤10	≥60	≤7	≤0.20	1	0.30	0.50	2.0	4	0.5	Well Milled	≥85
10%	≥40	-	≤10	≥50	≤12	≤0.30	2	0.40	1.50	4.0	6	1.0	Well Milled	
15%	≥40	-	≤10	≥45	≤17	≤0.50	3	0.50	2	4.8	7	1.5	Well Milled	

**REMARK:** ELG = Extra long grain, LG = Long grain, MG = Medium grain, SG = Short grain



**TABLE 2: AROMATIC RICE**

Grade of processing	Grade of grain length (%)			Grain composition (%)			Number of paddy rice /kg	Other composition (%)	Number of other types of rice kernel, not exceeding (%)				Milling degree	Purity (%)
	ELG	LG	MG	Whole kernel	Big Broken kernel	Small broken kernel			Damage kernel	Red streaked kernel	Chalky kernel	Yellow kernel		
100% A	≥70	-	≤5	≥60	≤4	≤0.15	1	0.1	0.5	0.5	3	0.1	Extra Well Milled	≥90
100% B	≥60	-	≤5	≥60	≤4	≤0.15	1	0.15	0.7	1.5	4	0.2	Extra Well Milled	≥87
5%	≥40	-	≤10	≥60	≤7	≤0.20	1	0.30	1.0	2.5	5	0.5	Well Milled	≥85
10%	≥40	-	≤10	≥50	≤12	≤0.30	2	0.40	1.5	4.0	6	1.0	Well Milled	
15%	≥40	-	≤10	≥45	≤17	≤0.50	3	0.50	2.0	4.8	7	1.5	Well Milled	

**TABLE 3: PREMIUM WHITE RICE**

Grade of processing	Median grain length (mm)	Classification of grain length (%)		Grain composition (%)			Number of paddy rice /kg	Other composition (%)	Number of all other types of rice kernel, not exceeding (%)				Milling degree	Purity (%)
		LG	MG	Whole kernel	Big Broken kernel	Small broken kernel			Damage kernel	Red streaked kernel	Chalky kernel	Yellow kernel		
100% A	≥6.6	≥60	≤30	≥60	≤3	≤0.15	1	0.10	0.2	0.25	4	0.2	Extra Well Milled	≥90
100% B		≥60	≤40	≥60	≤4	≤0.15	1	0.10	0.3	0.5	5	0.3	Extra Well Milled	≥87
5%		≥60	≤40	≥55	≤7	≤0.20	1	0.15	0.5	1.0	5	0.5	Well Milled	≥83
10%		≥40	≤60	≥40	≤12	≤0.30	2	0.30	1.0	1.5	6	1	Well Milled	
15%		≥40	≤60	≥40	≤17	≤0.50	3	0.50	1.2	2.00	7	1.5	Well Milled	

**TABLE 4: LONG GRAIN WHITE RICE GRADE 1**

Grade of processing	Long grain grade 1 (mm)	Grain composition (%)			Number of paddy rice /kg	Other composition (%)	Number of all other types of rice kernel, not exceeding (%)					Milling degree
		Whole kernel	Big Broken kernel	Small broken kernel			Damage kernel	Red streaked kernel	Red kernel	Chalky kernel	Yellow kernel	
100% A	≥6.6 - <7	≥60	≤3	≤0.15	1	0.1	0.2	0.25	0	4	0.2	Extra Well Milled
100% B		≥60	≤4	≤0.15	1	0.1	0.3	0.5	0	5	0.3	Extra Well Milled
5%		≥60	≤7	≤0.20	1	0.3	0.5	2.0	2	7	0.5	Well Milled
10%		≥45	≤12	≤0.30	4	0.4	1.0	2.5	2	8	1.0	Well Milled
15%		≥40	≤17	≤0.50	4	0.5	1.5	3.0	5	8	1.5	Well Milled
25%		≥35	≤28	≤1	5	1.0	2.0	5.0	7	10	1.5	Reasonably Milled
35%		≥30	≤40	≤2	10	2.0	2.5	7.0	7	12	2.0	Ordinary Milled

**TABLE 5: LONG GRAIN WHITE RICE GRADE 2**

Grade of processing	Long grain grade 2 (mm)	Grain composition (%)			Number of paddy rice /kg	Other composition (%)	Number of other types of rice kernel, not exceeding (%)					Milling degree
		Whole kernel	Big Broken kernel	Small broken kernel			Damage kernel	Red streaked kernel	Red kernel	Chalky kernel	Yellow kernel	
100%	≥6.2 - <6.6	≥60	≤3	≤0.15	1	0.1	0.2	0.25	0.0	5	0.2	Extra Well Milled
5%		≥50	≤7	≤0.20	1	0.3	0.5	2.0	1.0	7	0.5	Well Milled
10%		≥45	≤12	≤0.30	4	0.4	1.0	2.5	1.5	8	1.0	Well Milled
15%		≥40	≤17	≤0.50	4	0.5	1.5	3.0	2.5	8	1.5	Well Milled
25%		≥35	≤28	≤1	5	1.0	2.0	5.0	5.0	10	1.5	Reasonably Milled
35%		≥30	≤40	≤2	10	2.0	2.5	7.0	7.0	12	2.0	Ordinary Milled

**TABLE 6: MEDIUM GRAIN WHITE RICE**

Grade of processing	Medium grain (mm)	Grain Composition (%)			Number of paddy rice /kg	Other composition (%)	Number of all other types of rice kernel, not exceeding (%)					Milling Degree
		Whole kernel	Big Broken kernel	Small broken kernel			Damage kernel	Red streaked kernel	Red kernel	Chalky kernel	Yellow kernel	
100%	≥5.4 - <6.2	≥60	≤3	≤0.15	1	0.10	0.2	0.25	0.0	5	0.2	Extra Well Milled
5%		≥50	≤7	≤0.2	1	0.3	0.5	2.0	1.0	7	0.5	Well Milled
10%		≥45	≤12	≤0.3	4	0.4	1.0	2.5	1.0	8	1.0	Well Milled
15%		≥40	≤17	≤0.5	4	0.5	1.5	3.0	1.0	8	1.5	Well Milled
25%		≥35	≤28	≤1	5	1.0	2.0	5.0	5.0	10	1.5	Reasonably Milled
35%		≥30	≤40	≤2	10	2.0	2.5	7.0	7.0	12	2.0	Ordinary Milled

**TABLE 7: 100% BROKEN AROMATIC RICE**

Grade of processing	Whole kernel	Grain composition (%)			Number of all other types of rice kernel, not exceeding (%)							Milling Degree
		Broken and small broken kernel			Red streaked kernel and/or partly husked kernel	Yellow kernel	Chalky kernel	Damage kernel	Immature kernel, Other kernel and other matters	Maximum length of broken kernel (mm)	Minimum length of broken kernel (mm)	
		Total quantity (including broken kernel that can't pass through a sieve with round perforation 7 size: diameter of 1.75mm )	Base of broken kernel size	Small broken kernel								
100% Broken A1-Extra Super	≤10	obtained from 100% or 5% milling		≤1.00	-	≤0.35	≤3.0	≤0.5	≤0.5	Length greater than ½ of rice kernel ≥74	Length less than ½ of rice kernel ≤15.00	Well Milled
100% Broken A1-Super	-	obtained from 100% or 5% or 10% milling		≤5.00	-	≤0.35	≤3.0	≤0.5	≤0.5	-	-	

**TABLE 8: 100% BROKEN WHITE RICE**

Grade of processing	Grain composition (%)			Number of All Other Types of Rice Kernel, Not Exceeding (%)							Milling Degree
	Whole kernel	Broken kernel	Small broken kernel	Red Streaked Kernel and/or Uncompleted Milling Kernel	Yellow Kernel	Chalky Kernel	Damage Kernel	Immature Kernel, Other Kernel and Other Matters	Maximum Length of Broken Kernel (mm)		
100% Broken A1-Extra Super	≤10.00	-	≤1.0	-	≤0.5	≤7.0	≤0.5	≤0.5	Length greater than ½ of rice kernel	Length less than ½ of rice kernel	Well Milled
									≥74	≤10.00	
100% Broken A1-Super	-	-	≤5.0	-	≤0.6	≤7.0	≤0.7	≤0.5	-	-	Well Milled

4-2 The moisture content of milled rice of all grades should not exceed 14%.

4-3 Rice shall be free from any unpleasant odor and insects (dead or alive) as prescribed in Appendix A.

4-4 Rice shall not contain pesticide residues and/or heavy metal that can be harmful to human health as prescribed by the Codex Alimentarius Commission.

## 5. HYGIENE

- 5-1 The process of milled rice production shall comply with Cambodian standard CS 084:2010 on ASEAN General Principal and Requirements for food hygiene.
- 5-2 All milled rice products shall not contain microorganism, parasites or any substance originated from microorganism including mold in an amount that may be harmful to human health.



## 6. PACKAGING AND LABELING

### 6-1 Packaging

Milled rice shall be packaged in a type of container that preserves the hygiene, the nutritional properties and the high quality of food. The container including all types of packaging materials shall be made of substances that are safe and suitable for their use, handling and transportation. The packaging materials shall not contain any toxic substances or have undesired odor that can affect the quality of the product. The packing bag and/or sack must be clean, sturdy, and strongly sealed when packed.

### 6-2 Labeling

Labeling of milled rice products shall comply with the Cambodian Industrial Standard CS001:2000 for food products and CS085:2010 on ASEAN General Principle and Requirements for pre-packaged foods. Each package shall be labeled and clearly display the following information:

- |  |   |   |
|--|---|---|
| <b>a.</b> Name of 'milled rice' product  | <b>d.</b> Type  | <b>g.</b> Milling date and date of expiry |
| <b>b.</b> Trade mark, if any             | <b>e.</b> Grade                                       | <b>h.</b> Lot number                      |
| <b>c.</b> Net weight in gram or kilogram | <b>f.</b> Name and address of producer or distributor |   |

## **7. SAMPLING AND CRITERIA FOR CONFORMITY**

As described in chapter 7 in the full version of this Standard

## **8. TESTING METHODS**

All tests shall be carried out as described in Appendixes A to L in the full version of this Standard.

# CAMBODIAN RICE

(INDICA TYPE) COMPRISES OF INDIGENOUS VARIETIES

## FRAGRANT RICE

### Premium Fragrant

Jasmine (Wet Season, photo sensitive period)

Extra-long grain, strong natural scent, soft texture, tender-fluffy when cooked with tantalizing aroma.

Phka Malis (Jasmine):  
Phka Rumduol  
Phka Romeat  
Phka Rumdeng  
Somali, Neang Malis™

### Fragrant Rice

(Dry Season)  
mild natural scent

Long grain with similar Jasmine fragrance and characteristics, soft texture, tender when cooked, full of flavor.

Sen Kra Ob  
Sen Pidao

## WHITE RICE

### Premium White

(Wet Season)

Medium-length grain, kernel w/ translucent endosperm, white color, distinct scent. Soft after cooking, a versatile tasty variety.

Ginger Rice:  
Phka Knhey  
Phka Chan Sen Sar  
CAR 4, CAR 6, Riang Chey

### White Rice

(All Seasons)

Medium-length and long grain varieties, kernel w/ white endosperm, firm texture also after cooking.

Pearl Rice  
Neang Khon  
Ponla Pdao  
Neang Minh  
IR 66  
Chulsa

**Grades:** Milled and polished, 100% A, 100% B, 5%, 10%, 15%, 20%, 25%, 35%, 100% broken, A1 Super, A1 Extra Super;

**Premium Fragrant Organic, Organic Brown, Organic Red rice**

# CAMBODIAN RICE

White Gold

Produced by



Supported by



**IFC**

**International  
Finance Corporation**  
World Bank Group