

**MINISTRY OF NATURAL
RESOURCES AND
ENVIRONMENT**

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

No.: 31/2017/TT-BTNMT

Hanoi, September 27, 2017

CIRCULAR

PROMULGATION OF NATIONAL TECHNICAL REGULATION ON ENVIRONMENT

Pursuant to the Law on Technical Regulations and Standards dated June 29, 2006;

Pursuant to the Law on Environmental Protection dated June 23, 2014;

Pursuant to the Government's Decree No. 127/2007/ND-CP dated August 01, 2007 detailing the implementation of a number of articles of the Law on Technical Regulations and Standards;

Pursuant to the Government's Decree No. 36/2017/ND-CP dated April 04, 2017 defining Functions, Tasks, Powers and Organizational Structure of Ministry of Natural Resources and Environment;

At the request of Director General of the Vietnam Environment Administration, Director of the Department of Science and Technology, and Director of the Legal Department;

Minister of Natural Resources and Environment promulgates this Circular to introduce national technical regulation on environment.

Article 1. The national technical regulation on environment “QCVN 63:2017/BTNMT - National Technical Regulation on effluent discharged from the cassava starch processing factories” is promulgated together with this Circular.

Article 2. This Circular takes effect as from December 01, 2017.

Article 3. Director General of the Vietnam Environment Administration, heads of agencies affiliated to the Ministry of Natural Resources and Environment, Directors of Departments of Natural Resources and Environment of provinces or central-affiliated cities, and relevant organizations and individuals shall implement this Circular./.

**PP. MINISTER
DEPUTY MINISTER**

Vo Tuan Nhan

QCVN 63:2017/BTNMT

**NATIONAL TECHNICAL REGULATION ON EFFLUENT DISCHARGED FROM THE
CASSAVA STARCH PROCESSING FACTORIES**

Foreword

QCVN 63:2017/BTNMT is compiled by the Vietnam Environment Administration, presented by the Department of Science and Technology and the Legal Department for approval, appraised by the Ministry of Science and Technology and promulgated under the Circular No. 31/2017/TT-BTNMT dated September 27, 2017 by Minister of Natural Resources and Environment.

**NATIONAL TECHNICAL REGULATION
ON EFFLUENT DISCHARGED FROM THE CASSAVA STARCH PROCESSING
FACTORIES**

1. GENERAL PROVISIONS

1.1. Scope

This Regulation stipulates maximum permissible values of pollution parameters in effluent discharged from the cassava starch processing factories into the receiving waters.

1.2. Regulated entities

1.2.1. This Circular applies to effluent discharged from the cassava starch processing factories only. Organizations and individuals discharging effluent from their cassava starch processing activities into receiving waters shall comply with this Regulation.

1.2.2. The discharge of effluent from cassava starch processing activities into wastewater collection systems of centralized wastewater treatment plants shall conform to regulations of management boards of such plants.

1.3. Interpretation of terms

For the purpose of this Regulation, terms herein shall be construed as follows:

1.3.1. “effluent from cassava starch processing” refers to wastewater generated from the processing of cassava starch without mixing with other types of wastewater of a cassava starch processing factory.

1.3.2. “new facilities” refers to cassava starch processing factories or facilities which operate after the effective date of this Regulation, including those which are under construction and have obtained the approval for environmental impact assessment reports, environment protection commitments or environment protection schemes or plans before the effective date of this Regulation.

1.3.3. “existing facilities” refers to cassava starch processing factories or facilities that operate before the effective date of this Regulation.

1.3.4. “receiving waters” refers to drainage systems in urban areas, residential areas, industrial clusters, rivers, streams, canals, channels, lake, pond or wetland, near-coastal waters used for definite purposes.

2. TECHNICAL REQUIREMENTS

2.1. Maximum permissible values of pollution parameters in the effluent discharged from the cassava starch processing factories into the receiving waters

2.1.1. Maximum permissible values of pollution parameters in the effluent discharged from the cassava starch processing factories into the receiving waters shall be calculated by adopting the following formula:

$$C_{max} = C \times K_q \times K_f$$

Where:

- C_{max} denotes the maximum permissible value of a pollution parameter in the effluent discharged from a cassava starch processing factory into the receiving waters.

- C denotes the value of a pollution parameter in the effluent discharged from a cassava starch processing factory stipulated in Section 2.2;

- K_q denotes the coefficient of the receiving waters stipulated in section 2.3 equivalent to the flow of water in a river, stream, channel, canal or ditch; the volume of lake, pond and wetland; the use purpose of the near-coastal waters;

- K_f denotes the discharge flow coefficient stipulated in Section 2.4 equivalent to the aggregated flow of the effluent discharged from a cassava starch processing factory into the receiving waters.

2.1.2. The maximum permissible value of $C_{max} = C$ (except for the coefficient K_q and K_f) shall be applied to the pH and Total Coliforms parameters.

2.1.3. The effluent discharged from a cassava starch processing factory into the drainage system of an urban or residential area where none of centralized wastewater treatment plants is developed shall apply the value $C_{max} = C$ stipulated at the column B, Schedule 1.

2.2. The value C of pollution parameters in the effluent discharged from cassava starch processing factories are stipulated in Schedule 1

Schedule 1. The values C used as the basis for calculating the maximum permissible values of pollution parameters

No.	Parameter		Unit	Value C	
				A	B
1	pH		-	6 - 9	5,5 - 9
2	Total suspended solids (TSS)		mg/l	50	100
3	BOD ₅ (20°C)		mg/l	30	50
4	COD	New facilities	mg/l	75	200
		Existing facilities	mg/l	100	250
5	Total nitrogen (N)	New facilities	mg/l	40	60
		Existing facilities	mg/l	50	80
6	Total cyanide (CN ⁻)		mg/l	0,07	0,1
7	Total phosphorus (P)		mg/l	10	20
8	Total Coliforms		MPN or CFU/100 ml	3 000	5 000

The column A of Schedule 1 displays the values C of pollution parameters in the effluent discharged from the cassava starch processing factories into the water sources used for the purpose of supplying water to daily human activities;

The column B of Schedule 1 displays the value C of pollution parameters in the effluent discharged from the cassava starch processing factories into the water sources which are not used for the purpose of supplying water to daily human activities;

The use purpose of the receiving waters is determined at the wastewater receiving facility.

As from January 01, 2020, the statutory values applied to new facilities shall be so applied to all cassava starch processing facilities.

2.3. Coefficient of the receiving water K_q

2.3.1. The coefficient K_q equivalent to the flow of water in rivers, streams, channels, canals and ditches stipulated by Schedule 2 as follows:

Schedule 2: The coefficient K_q equivalent to the flow of the receiving water

The flow of the receiving water (Q)	Coefficient
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Measurement unit: cubic meter/second (m ³ /s)	Kq
$Q \leq 50$	0.9
$50 < Q \leq 200$	1
$200 < Q \leq 500$	1.1
$Q > 500$	1.2

Q is calculated by determining the mean value of the flow of the receiving water observed in 03 driest months of 03 successive years (data provided by the meteorology and hydrology center).

2.3.2. The coefficient Kq equivalent to the volume of the receiving water in lakes, ponds and wetlands stipulated in Schedule 3 as follows:

Schedule 3: The coefficient Kq equivalent to the volume of the receiving water

<i>The volume of the receiving water (V)</i> Measurement unit: cubic meter (m ³)	Coefficient Kq
$V \leq 10 \times 10^6$	0.6
$10 \times 10^6 < V \leq 100 \times 10^6$	0.8
$V > 100 \times 10^6$	1.0

V is calculated by determining the average value of the volume of the receiving water in lakes, ponds and wetlands during 03 months when the lowest water level is recorded in 03 successive years (based on the data provided by the meteorology and hydrology center).

2.3.3. If the receiving water is not given the data about the flow of receiving water in rivers, streams, canals, channels and ditches, the coefficient Kq = 0.9 shall be applicable; If the receiving water is not given the data about the volume of receiving water in lakes, ponds and wetlands, the coefficient Kq = 0.6 shall be applicable.

2.3.4. The coefficient Kq for the receiving water which is the near-coastal waters, or receiving waters in salt and brackish lagoons:

The near-coastal waters used for the purpose of aquatic life protection, water sports and entertainment services, the salt and brackish lagoon, shall take the coefficient value Kq = 1;

The near-coastal waters which are not used for the purpose of aquatic life protection, water sports and entertainment services shall take the coefficient value Kq = 1.3.

2.4. Coefficient of the discharge flow Kf

Coefficient of the discharge flow Kf is stipulated in the Schedule 4 as follows:

Schedule 4. Coefficient of the discharge flow K_f

Discharge flow (F)	Coefficient K_f
Measurement unit: cubic meter/day and night (m ³ /24h)	
F ≤ 50	1.2
50 < F ≤ 500	1.1
500 < F ≤ 5 000	1.0
F > 5 000	0.9

The discharge flow F is calculated on the basis of the maximum value of discharge flow shown in the environmental impact assessment report, environment protection commitment, environment protection scheme or plan, or the Certificate of completion of construction works or measures for environmental protection approved by competent authorities.

If the discharge flow F changes and is not consistent with the coefficient value K_f currently applied, the cassava starch processing facility must report to competent authorities to have it adjusted.

3. DETERMINATION METHOD

3.1. Methods for sampling and determination of the values of pollution parameters in the effluent discharged from cassava starch processing factories shall conform to the following standards:

Schedule 5. Methods for sampling and determination of the values of pollution parameters in the effluent discharged from cassava starch processing factories

No.	Parameter	Examination method and calibration code
1	Sampling	<ul style="list-style-type: none"> - TCVN 6663-1:2011 (ISO 5667-1:2006) – Water quality – Sampling – Part 1: Guidance on the design of sampling programmes and sampling techniques; - TCVN 6663-3:2008 (ISO 5667-3:2003) – Water quality – Sampling – Guidance on the preservation and handling of water samples; - TCVN 5999:1995 (ISO 5667-10:1992) – Water quality – Sampling – Guidance on sampling of waste water.
2	pH	- TCVN 6492:2011 (ISO 10523:2008) – Water quality –

		<p>Determination of pH;</p> <p>- SMEWW 2550 B – Standard methods for examination of water and wastewater – Determination of pH.</p>
3	BOD ₅ (20°C)	<p>- TCVN 6001-1:2008 (ISO 5815-1:2003) – Water quality – Determination of biochemical oxygen demand after n days (BOD_n) – Part 1: Dilution and seeding method with allylthiourea addition;</p> <p>- TCVN 6001-2:2008 (ISO 5815-2:2003) – Water quality – Determination of biochemical oxygen demand after n days (BOD_n) – Part 2: Method for undiluted samples;</p> <p>- SMEWW 5210 B – Standard methods for examination of water and wastewater – Determination of BOD.</p>
4	COD	<p>- TCVN 6491:1999 (ISO 6060:1989) – Water quality – Determination of the chemical oxygen demand (COD);</p> <p>- SMEWW 5220 B – Standard methods for examination of water and wastewater – Determination of COD.</p>
5	Total suspended solids (TSS)	<p>- TCVN 6625:2000 (ISO 11923:1997) – Water quality – Determination of suspended solids by filtration through glass-fibre filters</p> <p>- SMEWW 2540 – Standard methods for examination of water and wastewater – Determination of suspended solids.</p>
6	Total Nitrogen (N)	<p>- TCVN 6638:2000 (ISO 10048:1991) – Water quality – Determination of nitrogen – Catalytic digestion after reduction with Devarda's alloy;</p> <p>- SMEWW 4500-N.C – Standard methods for examination of water and wastewater – Determination of nitrogen content.</p>
7	Total cyanide (CN ⁻)	<p>- TCVN 6181:1996 (ISO 6703-1:1984) – Water quality – Determination of total cyanide;</p> <p>- SMEWW 4500-CN⁻ – Standard methods for examination of water and wastewater – Determination of Cyanide.</p>
8	Total phosphorus (P)	<p>- TCVN 6202:2008 (ISO 6878:2004) – Water quality – Determination of phosphorus – Ammonium molybdate spectrometric method;</p> <p>- SMEWW 4500-P.B&D – Standard methods for examination of water and wastewater – Determination of Phosphorus.</p>
9	Total Coliforms	<p>- TCVN 6187-1:2009 (ISO 9308-1:2000) – Water quality – Detection and enumeration of Escherichia coli and Coliform bacteria – Part 1:</p>

	<p>Membrane filtration method;</p> <ul style="list-style-type: none">- TCVN 6187-2:1996 (ISO 9308-2:1990) – Water quality – Detection and enumeration of coliform organisms, thermotolerant coliform organisms and presumptive Escherichia coli – Part 2: Multiple tube (most probable number) method;- SMEWW 9222 B – Standard methods for examination of water and wastewater – Determination of coliform.
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3.2. Examination methods mentioned in the guidance provided in other national and international regulations which have proved their accuracy equal to or higher than those mentioned in regulations referred to at section 3.1 shall be accepted.

4. IMPLEMENTATION

4.1. Environment-related regulatory agencies shall be responsible for providing guidance on, inspecting and supervising the implementation of this Regulation.

4.2. In case standards referred to in Section 3.1 of this regulation have been changed, amended or replaced, the new standards shall be applicable.