
Draft Jamaican Standard
Specification
for
Synthetic laundry detergent powder



Bureau of Standards Jamaica

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Draft Jamaican Standard

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JS 73:2025

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Jamaican Standards establish requirements in relation to commodities, processes and practices, but do not purport to include all the necessary provisions of a contract.

The attention of those using this standard specification is called to the necessity of complying with any relevant legislation.

Amendments

No.	Date of Issue	Remarks	Entered by and date

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Foreword

This standard is a revision of and supersedes JS 73:2017.

It specifies the general and detailed requirements for synthetic laundry detergent powder. Since the preparation of the original standard and its publication in 1979, followed by revisions in 1992 and 2013, several developments have taken place in the detergent industry at both the local and international levels.

Concerns expressed by environmentalists regarding beach erosion and algal growth in closed waterways, have led to reformulations of synthetic detergents in an effort to mitigate their negative impact on the environment. National concerns were raised about the permissible levels of phosphates in detergents, which are present and observed at high levels in wastewater discharges from industrial, commercial, agricultural and domestic sources. With a view to protect the environment, this revision of JS 73: 2017 reflects the results of recent studies conducted to measure the impact of phosphates in powdered detergents.

To facilitate the protection of the environment, the major amendment made to the JS 73: 2017 (and subsequently reflected in this standard) was a change, after careful deliberations and investigations, the required active ingredient was reduced from a minimum of 14% by mass to 10% by mass. These requirements will be subject to the future review as additional studies are conducted.

This standard is compulsory.

Acknowledgement

Acknowledgement is made to the College Green Treatment Plant and College Green Community for facilitating the research studies carried out by the Committee.

Related documents

This standard makes reference to the following:

Draft Jamaican Standard Specification for Synthetic laundry detergent powder

1. Scope

This national standard provides the specification for synthetic laundry detergent powder, herein referred to as detergent. It specifies the chemical and physical requirements, identifying maximum and minimum permissible limits of key parameters. It also covers essential ingredients, test methods and requirements for packaging, labelling and sampling.

This national standard is applicable to synthetic laundry detergent powder intended primarily for washing household textile products using traditional washing machines, or by manual means.

This national standard does not apply to liquid laundry detergents, high efficiency laundry detergents (HE) and does not include methods for measuring the performance of synthetic laundry detergent powder.

2. Terms and definitions

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

2.1 active ingredient. The organic surface-active material present in the detergent.

NOTE Permissible types of active ingredients includes anionic, cationic and non-ionic.

2.1.1 anionic surface active agent – a surface active agent which ionizes in aqueous solution to produce negatively charged organic ions which are responsible for the surface activity.

2.1.2 cationic surface active agent – a surface active agent which ionizes in aqueous solution to produce positively charged organic ions which are responsible for the surface activity.

2.1.3 non-ionic surface active agent – a surface active agent which does not produce ions in an aqueous solution, but has functional groups which are responsible for its surface activity.

2.2 alkaline builder. Substance used to bind dissolved metal ions and support emulsification. Material added to the detergent formulation that enhances or maintains the cleaning efficiency of the surfactant, principally by deactivating water hardness either by sequestration, precipitation or ion exchange.

2.3 anti-ashing agent. A substance which inhibits or reduces the deposition and re-deposition of calcium salt in the wash process.

2.4 anti-caking agent. Additive placed in powdered or granulated materials to prevent the formation of lumps, making the product better for packaging, transport, and for the consumer.

2.5 anti-redeposition agent. A substance that inhibits the re-deposition of suspended soil in the wash process.

2.6 biodegradeable. The susceptibility of being decomposed by bacteria and other living organisms.

2.7 detergent. A surfactant possessing cleaning properties.

2.8 enzyme. A protein-based, biological additive that works to rapidly degrade some of the components of dirt and other foreign matter lodged within fabric (namely proteins, starches, fats).

2.9 fluorescent whitening agent. Additive used to enhance the appearance of fabric colour, causing a perceived whitening effect to make clothes appear brighter and cleaner (also referred to as ‘optical brightening agent’).

2.10 laundry blue. A dye-containing product used to give a blue tint to improve the whitening of fabrics in the laundry by counteracting the natural yellowing that occurs during laundering.

2.11 laundry detergent powder (for household use). A substance primarily intended for the wet-

cleaning of household textile products which contains, as an essential component, a surfactant for laundering fabrics.

2.12 mixed active ingredient detergent. A detergent containing either cationic and/or anionic active ingredient in addition to non-anionic active ingredient.

2.13 outer case. A parcel consisting of packages of detergents, grouped together for ease of handling, transport, distribution and/or sale.

2.14 package. The unit in which the detergent is stored, which is labelled, and distributed for individual sale. It may be a carton, sack, box or bag.

2.15 softening agent. A compound which when added to water isolates the major metal ions which contribute to hardness (namely calcium and magnesium and other minerals) allowing the detergent to function more effectively.

2.16 surfactant. A material which modifies the surface or interface properties of the liquid medium to which it is added.

NOTE Admitted term for surfactant is 'surface active agent'.

3. General requirements

31 Appearance. The detergent shall consist of uniformly blended free-flowing granules or powder, free from foreign matter. It shall not give rise to excessive detergent dust.

32 Odour. The detergent shall be free from objectionable odour as received, and when dissolved in hot or cold water.

33 Dispersibility. The detergent shall appreciably dissolve in water.

34 Storage properties. When stored according to the manufacturer's instructions, the detergent shall retain its effectiveness for a period of at least 6 months from the date of manufacture.

35 Safety. The detergent shall be so formulated and processed to minimize adverse skin reactions such as cracking, redness and swelling of the skin, when used in accordance with the product stipulated directions.

4. Detailed requirements

41 The detergent shall contain the following:

- (a) a surface active agent;
- (b) sodium silicate;
- (c) an alkaline builder system (e. g. sodium carbonate, zeolite and other softening agents);
- (d) sodium carboxymethyl cellulose (or other anti-redeposition agents with equivalent effect);
- (e) a fluorescent whitening agent/optical brightening agent, effective on cellulosic material; and
- (f) anti-ashing ingredient.

42 The detergents may also contain sodium sulphate, oxygen bleaches, perfumes, preservatives, anti-caking agents, anti-tarnish agents, foam stabilizers, softening agents and dispersants.

43 Surface-active components of the material shall consist of one or a mixture of two or more of the following:

- (a) compounds of molecular weight 300g to 700g; Anionic surface active
- (b) non-ionic compounds such as ethoxylated linear fatty alcohols; Non-ionic surface active
- (c) sulfonated fatty amide(s) of molecular weight 350g to 430g; Cationic surface active

44 The surface-active component whether cationic, non-ionic or anionic shall be no less than 85% biodegradable.

45 The detergent shall comply with the detailed requirements given in tables 1A and 1B, when

analysed in accordance with the test methods specified in JS 126.

Table 1A. Requirements for synthetic laundry detergent powder

Characteristics	Minimum % by mass	Maximum % by mass	Test method specified in JS 126
Moisture and volatile matter content at 105°C	-	20%	See clause 9
Anionic active ingredient (Cationic and non-ionic active ingredients may be present at varying levels.)	10%	-	See clause 4
Phosphates – sodium tripoly-phosphates and / or tetrasodium pyrophosphates or softening agents or combination of softeners	0%	1%	See clause 11
Zeolite	6%	-	
Polycarboxylates (PCAs)	-	1%	-
Sodium silicate	4%	10%	See clause 7
Sodium carbonate	9%	-	See clause 6
Sodium carboxymethyl cellulose (CMC) / anti-redeposition agent	0.3%	-	-
Fluorescent whitening agent / optical brightening agent / laundry blue	0.2%	-	-
Water insoluble matter	-	2%	-
Particle size (sieve analysis):			
(a) Passing through U. S. Standard No.10 sieve	95%	-	
(b) Passing through U. S. Standard No. 120 sieve	-	3%	
Enzyme(s) (Optional)	-	-	
Perfume (Optional)	-	-	

Table 1B. Other requirements for synthetic laundry detergent powder

Characteristics	Minimum	Maximum	Test method specified in JS 126
pH of a 1% aqueous solution	9	11	See clause 10

5. Packaging

The detergent shall be packaged and supplied in securely closed containers to protect it from deterioration and leakage, as agreed to between the purchaser and the supplier.

6. Labelling

6.1 Labelling shall comply with the requirements specified in JS 349, JS 350 and with other relevant labelling standards and regulations of the Bureau of Standards Jamaica. Packages for individual sale must be clearly and legibly labelled and/or marked to convey the following information:

- name of the product shall be expressed as ‘laundry detergent powder’; or Powdered Laundry

Detergent

- (b) brand name of the product and/or recognized trademark, where applicable;
- (c) name and address of the manufacturer and/or distributor including the country of origin;
- (d) month and year of manufacture;
- (e) net weight of the contents of the packaged product;
- (f) batch number or lot number stated in code or otherwise;
- (g) a statement outlining the minimum anionic active ingredient;
- (h) list of mandatory ingredients;
- (i) instructions for applicable usage;
- (j) first aid instructions;
- (k) precautions for use or potential hazards presented by product use;
- (l) a cautionary statement as to the irritant capability of the detergent, for example, 'Detergent solution can be a skin irritant. Avoid prolonged contact. Rinse garment and hands thoroughly';
- (m) the statement 'Keep out of the reach of children'.

62 Labelling requirements outlined in **6.1** (a), (b), (e) and (m) shall be included on the principal display panel of the product label.

7. Sampling

Representative samples of the detergent shall be drawn in accordance with the procedures detailed in Appendix A.

8. Criteria for conformity

81 The synthetic detergents shall be regarded as conforming to this standard if the criteria set out in **clause 4** and **8.2** are met.

8.2 The composite and individual samples shall satisfy the general requirements for sampling specified in **clause A.2**.

81 In the case of composite samples, the test results shall show 100% conformity to the detailed requirements found in table 1A and 1B. In the case of individual samples, a minimum of 90% conformity is required in accordance with tables 1A and 1B.

Appendix A

Sampling procedure for synthetic laundry detergent powder

A1 1 General requirements

In the selection, preparation, storage and handling of the samples, the precautions given in A. 1. 1 to A. 1. 6 shall be observed.

A11 Samples shall be taken in a protected environment not exposed to damp air or dust.

A12 The sampling equipment shall be clean and dry when used.

A. 1. The detergents being sampled, the sampling instruments and the containers of the samples shall be protected from contamination.

A14 The samples shall be placed in clean, dry, inert containers (e. g. glass, plastic), which shall be of such sizes that they are almost completely filled by the samples.

A15 Each container shall be sealed air-tight after filling, and marked with full details of sampling including the date of sampling, batch or code number, name of manufacturer and other important particulars of the consignment.

A16 The samples shall be stored in such a manner that the temperature of the material does not vary unduly from the room temperature, and that they are protected from light.

A2 2 Sampling

A21 In a single consignment, all the packages containing synthetic laundry detergents of the same type and form, and drawn from the same batch of manufacture shall constitute a lot. If the consignment consists of different types and forms of synthetic detergents then the packages containing detergents of the same type, form and batch of the manufacture shall be grouped together, and each such group shall constitute a separate lot.

A22 To ascertain the conformity of the lot to the requirements prescribed in this standard, tests shall be carried out on each lot separately. The number (n) of packages to be selected for sampling shall depend upon the size (N) of the lot, and shall be in accordance with table 2.

Table 2. Scale of sampling

Number of packages in the lot (N)	Number of packages to be selected (n)
4-15	3
16-40	4
41-65	5
66-110	7
111 and above	10

A23 The packages to be tested shall be selected at random. To ensure randomness of selection, random tables shall be used. In case such tables are not available, the procedure given in A.2.3.1 may be used.

A231 Starting from any package, all packages shall be counted in one order as 1, 2, 3,... up to r, where r is the integral part of N/n , (N being the lot size and n the number of packages to be selected). Every r^{th} package thus counted shall be withdrawn to give a sample for test.

A3 Preparation of test samples

A31 One or more containers shall be drawn at random from each of the packages selected as detailed in A. 2. The amount of synthetic detergent in the containers so chosen shall be nearly thrice the quantity required for purposes of the tests as indicated in A. 4.

A32 The material from the containers selected, as in A. 3. 1, shall be mixed thoroughly to give the gross sample for the package.

A321 *Composite samples.* From the gross sample for each package representing the same lot, a small but equal quantity of material shall be taken and mixed thoroughly into a composite sample representing the lot. This composite sample shall be of a size sufficient to carry out triplicate testing for the entire characteristic specified in **A.4**.

A322 *Individual samples.* The remaining portion of the material in each of the gross samples shall be regarded as individual samples.

A33 All composite and individual samples shall be transferred to separate containers, which shall be sealed air-tight with stoppers, and labelled with full particulars of identification as given in **A.1.5**.

A4 Number of tests

A41 Tests for determination of the anionic active ingredient shall be performed on each of the individual samples.

A42 Tests for the determination of the remaining characteristics specified in tables 1A and 1B shall be conducted on the composite sample(s).

Standards Council

The Standards Council is the controlling body of the Bureau of Standards Jamaica and is responsible for the policy and general administration of the Bureau.

The Council is appointed by the Minister in the manner provided for in the Standards Act, 1968. Using its powers in the Standards Act, the Council appoints committees for specified purposes.

The Standards Act, 1968 sets out the duties of the Council and the steps to be followed for the formulation of a standard.

Preparation of standards documents

The following is an outline of the procedure which must be followed in the preparation of documents:

1. The preparation of standards documents is undertaken upon the Standard Council's authorisation. This may arise out of representation from national organisations or existing Bureau of Standards' Committees of Bureau staff. If the project is approved it is referred to the appropriate sectional committee or if none exists a new committee is formed, or the project is allotted to the Bureau's staff.
2. If necessary, when the final draft of a standard is ready, the Council authorises an approach to the Minister in order to obtain the formal concurrence of any other Minister who may be responsible for any area which the standard may affect.
3. The draft document is made available to the general public for comments. All interested parties, by means of a notice in the Press, are invited to comment. In addition, copies are forwarded to those known, interested in the subject.
4. The Committee considers all the comments received and recommends a final document to the Standards Council.
5. The Standards Council recommends the document to the Minister for publication.
6. The Minister approves the recommendation of the Standards Council.
7. The declaration of the standard is gazetted and copies placed on sale.
8. On the recommendation of the Standards Council the Minister may declare a standard compulsory.
9. Amendments to and revisions of standards normally require the same procedure as is applied to the preparation of the original standard.

Overseas standards documents

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The Bureau can supply on demand copies of standards produced by some national standards bodies and is the agency for the sale of standards produced by the International Organization for Standardization (ISO) members.

Application to use the reference library and to purchase Jamaican and other standards documents should be addressed to:

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