Date: November 2 Document: DCRS 73 – Biodegradable Products - Specification

1	2	(3)	4	5	(6)	(7)
MB 1	Clause No./ Subclause No./ Annex / Figure / Table	Line Number	Type of com- ment 2	Comment (justification for change) by the MB	Proposed change by the MB	RTC observations on each comment submitted
TT	all	all	ed	Generally, the document contains grammatical errors.	Please review the document for grammatical errors	Noted
TT	n/a	n/a	ed	Overall numbering system is confusing and unclear. See 4 General Requirements. It is followed by Points 1, 2, 3 and 4, which were left blank. Following 4.1.1. there is Point 4, 5 and 6 with no information also. After 6.1 (iv), there are Points 1, 2, 3, and 4; then 4.1. All Points are blank. Formatting like this is seen throughout the document.	Suggest to review and amend with chronological numbering.	Noted
DM	Foreword		ed	'Tesh" in the definition of the standard BS EN 13432: 2002 should be Test.	'Tesh' to Test	Accepted
LC	Foreword	3	Ed.	Incorrect spelling. BS EN 13432: 2002, Packaging – Requirements for packaging recoverable through composting and biodegradation – <u>Tesh</u> scheme and evaluation criteria for the final <u>acceptaance</u> of packaging."	Correct to "BS EN 13432: 2002, Packaging – Requirements for packaging recoverable through composting and biodegradation – <u>Test</u> scheme and evaluation criteria for the final <u>acceptance</u> of packaging. " Also would it be a better approach to identify the EN standard as a reference or consulted document? Otherwise a Bibliography may be better to capture list of standards	Accepted
GY	Foreword	16	ed	Word misspelt "acceptaance"	Word should be spelt "acceptance"	Accepted
DM	1	3	ed	The statement is not synchronized. The opening part of the statement should be revised.	'This standard applies to materials used to manufacture:' Or 'This standard applies to materials used in the manufacturing of:'	Accepted with modification
GY	1	4	ge	Define single use bags	Define single use bags as covered by the standards. Does it include bag used for food storage and packaging for medical purposes?	Definition added

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DM	2		ed	'Tesh" in the definition of the standard BS EN 13432: 2002 should be Test.  The word acceptance in the last line has an extra 'a'.	'Tesh' to Test 'acceptaance' to acceptance	Accepted
TT	Scope		ge	This standard should also include the packaging used for shelf-ready and pre-packaged food products already packaged and imported into the Caribbean.	Insert c) packaging used for pre-packaged foods and shelf ready products	Inclusion accepted
TT	Scope		ed	Editorial change necessary.	Line (b) should read Products used in food and beverage service, inclusive of packaging and tableware.	Inclusion accepted
П	Scope			The Scope needs to be clarified. The sentence of the Scope seems to apply to wide set of products but then the list is specific.  The scope of the standard should clearly define all the product categories covered therein. There are many categories of disposable and/or biodegradable products, even within the food industry. The scope, as is, leaves too much room for interpretation. Consider narrowing the scope or adding clarity on what is covered by the standard.  The Scope should relate to the method of disposal of the product and not the function of the product	Example of a more clearly defined scope.  This standard specifies the requirements for determination of biodegradable and compostable materials for single use bags and food-contact packaging used in the food and beverage service, inclusive of tableware and cutlery It also specifies the requirements for the labelling of these products.	Rewording accepted in part. Labelling requirements statement moved to the end of scope.
П	Scope		te	Clarification is required on how bags which have multiple uses, will be considered, with regard to biodegradable considerations  The scope of the standard should clearly define all the products covered therein. There are many categories of disposable and/or biodegradable products, even within the food industry. The scope, as is, leaves too much room for interpretation.		Category B covers the use of multiple use bags

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ТТ	Scope		te	Please clarify whether biodegradable should address the different types: water biodegradable, soil biodegradable, landfill biodegradable.  It is necessary to address degradable vs biodegradable?  Degradable can be categorized into several types: photodegradable, hydrolyzable, oxo-degradable, soil degradable, landfill degradable. These types of products are undesirable because they do not biodegrade or compost.		The standard does not speak to water biodegradable as this are not widely use and accepted  Sections 4.5 and 5.2 indicates the areas that are considered
DM	3		ge	The term 'compostable' should be included in the list of terms and definitions. This would assist in clarification and justification for the use of the word in 4.4.4, since many persons tend to use the two terms (biodegradable and compostable) interchangeably.	'Compostable' - describes the capability of a material or product to disintegrate by biological processes into natural elements in a compost environment, leaving no toxicity in the soil.	Definition included

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TT	2		Те	Include the references to EN 14995.		Not accepted The EN 13432 and ASTM 6400 are the most internationally recognized for biodegradability and certification. These documents are also referenced in the EN 13432 and the ASTM 6400, with the exception of the AS 4736 which is also well recognized for certification

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TT	Normative	Te	Should include the following Standard Test Methods
	References		
			ASTM D5511 - 18
			Standard Test Method for Determining Anaerobic
			Biodegradation of Plastic Materials under High-Solids
			Anaerobic-Digestion Conditions
			Active Standard ASTM D5511   Developed by
			Subcommittee: D20.96
			NOTE 1: This test method is equivalent to ISO 15985.
			Source Document:
			https://www.astm.org/Standards/D5511.htm
			NB: The full Standard is available from the above
			source document location
			ASTM D5526 - 18
			Standard Test Method for Determining Anaerobic
			Biodegradation of Plastic Materials under Accelerated Landfill Conditions
			Active Standard ASTM D5526   Developed by
			Subcommittee: D20.96
			Source Document:
			https://www.astm.org/Standards/D5526.htm
			NB: The full Standard is available from the above
			source document location
			ASTM D7475 - 20
			Standard Test Method for Determining the Aerobic
			Degradation and Anaerobic Biodegradation of Plastic
			Materials under Accelerated Bioreactor Landfill
			Conditions
			Active Standard ASTM D7475   Developed by
			Subcommittee: D20.96
			Source document:
			https://www.astm.org/Standards/D7475.htm
			NB: The full Standard is available from the above
			source document location
			NOTE:
			NOTE.

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Justification for the inclusion of Standard Testing Methods ASTM D5511, ASTM D5526 and ASTM D7475

The Scope of the proposed Regional Standard deals only with biodegradation of compostable material in Industrial/Municipal composting facilities/plants omitting entirely materials which biodegrade without being processed in these industrial composting facilities/plants. This is contrary to the stated Scope of the Standard.

As Industrial Composting Plants are non-existent in the CARICOM region, items requiring these facilities will end up in landfills. Industrial Composting is basically aerobic biodegradation involving the strict control of the temperature, humidity, PH, and oxygen/aeration level of the composting batch. These controlled conditions do not exist in nature and also not present in landfills. Landfills basically support anaerobic bio-degradation.

Materials or bio-plastics certified as compostable under ASTM 6400/EN13432 specifications, voids their certification if placed in a landfill and cannot claim any benefits re biodegradation.

There are many different Bio-Plastics being manufactured.

#### Reference:

https://www.researchgate.net/publication/229918338\_ Bioplastics

Bio-plastics can also be manufactured as co-polymers or bio-composites using two or more polymers including those with additives.

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	Table			It would not be scientific to insist all plastics including single use adhere only to Composting Specifications.  The scientific world has long determined that this is not possible and hence has developed many Standard test methodologies to determine their unique biodegradation rates in specific environments. The reasons for this are as follows:  1. To determine the rate of biodegradation in specific environments 2. To determine how the biodegradation process influences/affect ecological systems 3. To determine what remedial action can be taken to reduce these effects  The remedial action can involve the following: 1. Re-engineer the plastic by employing the techniques of copolymerization, blending, use of additives etc. 2. Recommending specific disposal methodologies in order to achieve the optimum end of life value		

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TT	Normative references		Ge	Industrial Composting plants are expensive to build and operate. They have their share of problems including segregation of the compostable materials in the waste stream, contamination of the batch with bioplastics and blends, waste water treatment and some plants reject certain compostable items as they impede the composting operation. These plants are a financial burden on any state.  One direction is the use of plastics which degrade naturally in landfills. This plastic avoids the expense of segregation of the waste stream and as landfills are the de facto means of disposal in the CARICOM region it does not place any additional burden on any state's finances. One such product is already being manufactured in the CARICOM region and sold at a price comparable to the non-biodegradable product.  Composting facilities for food waste must not be confused with the industrial composting plants as quite different processes are involved. Food waste composting facilities cannot process compostable materials and products covered in this Scope.  CONCLUSION:  The purpose of including Standard Test Methods ASTM D5511, ASTM D5526 and ASTM D7475 is to verify and set biodegradation requirements for biodegradable materials which can degrade in anaerobic conditions/environments such as landfills		

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TT	Definitions	Recommendation to include definitions for the following as appropriate:	single-use conceived, designed, designated or intended by the manufacturer for one-time use only, within its life span, prior to disposal	Single use definition accepted
		Bio-based     Tableware  Oxo-biodegradable and degradable have been used in the document and should also be included in the definitions. This can be as part of the definition of oxodegradable as the Packaging may not necessarily be construed as referring to the receptacles designed to come into direct contact with food and could refer to the outer shell used to protect contents on the inside. These should also be defined.  Single use bags and tableware are referenced in the scope but they have not been adequately defined.	compostable material or product able to be biodegraded in a composting process: a) without leaving any visible, distinguishable or toxic residue; and b) under managed conditions, inclusive of, temperature, humidity and time-frame, in a composting facility NOTE to entry: To claim compostability, it must have been demonstrated that a material can be biodegraded and disintegrated in a composting system (as can be shown by standard test methods). The compost must meet the relevant quality criteria. Quality criteria are, for example, low regulated metal content, no ecotoxicity, no obviously distinguishable residues.	Compostable definition accepted
			oxo-degradable material or product designed to break-down by accelerated oxidation and fragmentation through the addition of chemicals under the action of oxygen and ultraviolet light or ultraviolet light and heat	Oxo-degradable definition accepted
			biobased material or product wholly or partly derived from biomass, such as plants, trees or animals (the biomass can have undergone physical, chemical or biological treatment)." EN 16575 or Bio-based material as an organic material in which carbon is derived from a renewable resource via	EN definition for Biobased accepted

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					biological processes. Bio-based materials include all plant and animal mass derived from carbon dioxide recently fixed via photosynthesis, per definition of a renewable resource. ASTM 6866  packaging wrapper, bags, confining band or card designed to come into direct contact with food and in which the food is offered for sale to the consumer  tableware utensils used at the table for holding, serving, and handling food and drink, including various types of containers (known as hollowware), spoons and forks (flatware), knives (cutlery)	Modified definition inserted  utensils used to aid the consumption of food and drink, including various types of containers (known as hollowware), spoons and forks (flatware), knives (cutlery)
LC	3		Ed.	Incorrect formatting of terms and definitions.	Terms and definitions to begin with lowercase letters.	Accepted
GY	3.2	1	ed	Word misspelt "materal"	Word should be spelt "material"	Accepted
TT	3.2	3	ed	The spelling of the word "bacteria" is incorrect.	Change from "bateria" to "bacteria".	Accepted
TT	3.4	1	ed	The spelling of the work "constitutent" is incorrect.	Change from "constitutent" to "constituent".	Accepted

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BB	3.10	1-3	TE	The use of known dry weight of test materials is a better measure instead of volumes, and would be consistent with the measurements used in clause 4.2.2.		Definition adjusted to say mass instead of volume
ВВ	3.10	1-2	ge	Given that the composition of compost and the test material may be quite heterogeneous, using mass may be more accurate and reproducible than using volume.	The loss in mass calculated by subtracting the mass of residue, after incinerating a sample of a test material or compost at about 550°C, from the total mass of dry solids of the sample.  (perhaps a timeframe for incineration could also be	See above
				To improve clarity	included if applicable)	
TT	4.1.1	1	te	There was no reference to the person who is required to identify the packaging material, how the identification should be recorded, and to whom the packaging material should be identified. Clarification is required on whether the importer/distributor is required to identify the packaging material and record in a specific document prior to onward distribution.	Reword the introductory text for clarity.  Maybe preface the subclause as follows:  The manufacturer or importer or distributor shall have available information on the characterization of the packaging material, for review by the National Competent Authority, as follows:	Accepted
					Delete the current wording which states – Each packaging material shall be identified, based on information provided by manufacturer, prior to testing as follows:	
TT	4.1.1			This gives the impression that only the samples being inspected or tested should meet the requirement. This phrase should be deleted to indicate that all items under the scope of the standard are subjected to the requirements.	Reword for clarity.	Clause reworded

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TT	4.1.1.		Ge	There needs to be clarity on this requirement.  Need to clarify what is meant by "Prior to which testing".	Reword for clarity	Clause reworded
TT	4.1.1.i-iv		Ge	Where does this information go, to whom is it provided and how is it provided? Does it go on the label? Some information may be required for the testing and certification activities.	Reword for clarity. See recommendation above.	Clause reworded
TT	4.1.1	2	te	There was no reference to the testing requirements (the tests required and by whom).	Test methods are required for ii. volatile solids (American Public Health Association Standard test Method 2540E or 2540F for volatile solids) iii. heavy metals iv. organic carbon content	Accepted. Test methods to be included
TT	4.1.1		Te	1. Uncertain if some of the requirements outlined can be obtained prior to testing, as specified for Characterization e.g. volatile solid contents, organic carbon content and total dry solids.  This information is not usually readily available to an importer/distributor and may prove difficult to meet this requirement.	Suggest to only list characteristics that can be easily observed and which will not require testing.	Not accepted; the onus is on the manufacturer to provide the required information
				2. Suggest to use consistent language throughout to document. Is reference being made to materials, products, packaging materials or substances as these terms have been used interchangeably throughout the document?	Suggest to use consistent language throughout the document, starting from this clause.	Accepted; Use biodegradable and compostable materials
TT	4.1.1 Characteriza tion	(iii)	ed	Check capitalization of term "national competent authority" and include semi colons after each criteria in section	"National Competent Authority. Annex A is provided for consideration and guidance; and"	Accepted

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ТТ	4.1.1		Te	Why was the thickness of material criteria removed? Was it deemed unnecessary?		Regardless of the thickness material, the product must meet all the other parameters outlines.
TT	4.1.1		Ge	Need to focus on test methods and the relevant pass/fail criteria.  Each Member State would have to determine what conformity assessment systems are to be used if biodegradable products are to be regulated.		Noted
TT	4.1.1(i)	1	te	The types of information required should be listed as guidance. This sentence also reads almost the same as the introductory sentence of 4.1.1.	Specify the actual information which is required. Consider adding the types of information required such as chemical name, quantity/concentration, etc. as minimum requirements; or merging with the introduction of 4.1.1.	Introductory statement rephrased
TT	4.1.1(ii)	all	ed	The "volatile solid contents" may be considered a type of "information" required in 4.1.1(i).	Consider changing to a sub-bullet of 4.1.1 (i).	Introductory statement rephrased
TT	4.1.1.ii		Те	Is there any guidance as to what the volatile solids are?		Refer to definition
TT	4.1.1(iii)	all	ed	The "presence of heavy metals…" may be considered a type of "information" required in 4.1.1(i).	Consider changing to a sub-bullet of 4.1.1 (i).	Introductory statement rephrased
TT	4.1.1(iv)	all	ed	The "organic carbon content…" may be considered a type of "information" required in 4.1.1(i).	Consider changing to a sub-bullet of 4.1.1 (i).	Introductory statement rephrased

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ТТ	4.2.1	1-2	Ge	The sentence appears incomplete. The inclusion of the term "during composting" is not clear with reference to the "finished product" in the same sentence.	Suggest to rephrase the sentence if the intention is to emphasize that residues are not distinguishable, for example:  A material shall be considered as disintegrated by composting when residues are not readily distinguishable in the end product.	Accepted
TT	4.2.1	1-2	te	The terms "residues" and "organic material" are used in this sentence but it is not clear whether both refer to "biodegradable materials" and/or "packaging materials" which are defined in the standard.	Clarify if either or both, the biodegradable materials" and/or "packaging materials should not be found in significant quantities.	Clause rephrased
TT	4.2.1	2-3	te	The interpretation of the term "significant quantities" may be subjective. The relationship to 4.2.2 is not clear where meeting the requirements of the test in 4.2.2 may imply that "insignificant" quantities of the material in 4.1.1 exists.	Use clearer text regarding the disintegration status of the material.  Reword to state that the limits are as per the reference standards	Accepted. Clause reworded
ТТ			Te	The phrase stating "the material must not be found in significant quantities" could be subjective and is vague. Is it that the material must not be found in visible quantities during screening or is there a particular percentage that the material must not exceed to be considered insignificant?	Suggest to user clearer terminology regarding the disintegration status of the material.	Clause reworded
TT	<del>4.2.1</del> 4.3.1		Ge	This should be a note? Alternatively, the 1 <sup>st</sup> sentence can be incorporated into a definition related to disintegration.	Reword for clarity as the first sentence is not written as a requirement but more as information.	Clause placed as a note
BB	4.3.1	1	ed	Should be written in the present tense since the statement is always true.	This process involves the alteration of the chemical structure of any material including plastic brought about by biological action, resulting in the loss of a specific property of the substance.	Accepted

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TT	4.3		Ge	Throughout this section, the different clauses switch between use of "materials" and "substance". There should be clarity and consistency throughout. These two terms are not interchangeable. The first sentence of the scope says "This standard specifies the requirements for biodegradable and compostable materials."; so this should perhaps be used.	Use the term "materials" consistently throughout the section/document.	Accepted
TT	4.3.1	all	ed	The term "biodegradability' was defined. Please clarify why 4.3.1 was included. Should 4.3.1 be incorporated into the definition for biodegradability as it does not seem to be a general requirements characteristic that needs to be fulfilled for satisfactory composting. 4.3.1 is better placed as a definition or a NOTE.	Suggest to merge 4.3.1 with the definition for biodegradability.or include as a NOTE under 3.1, or change 4.3.1 to an introductory sentence	Clause changed to a note
TT	4.3.1	1	ed	Given this is a definition, the tense used for 'involved' appears inappropriate	Suggest changing 'involved' to involves	Accepted
TT	4.3.2	all	te	The mention of plastic is unclear since the standard addresses packaging materials. Please clarify why plastic was specifically mentioned.	Suggest to rephrase with reference to the constituents of a packaging material or packaging materials.	Packaging material accepted
TT	4.3.2		Te	The references to plastic products have been removed throughout the document as these items are not under discussion within the Standard, and this should be maintained throughout the document for consistency.	The phrase 'plastic product' should be removed and replaced with 'material'.	Clause reworded to packaging material
TT	4.3.2			The subclause should be rephrased to address the finished product and not the total material. As is, the subclause seems somewhat disjointed.	Reword for clarity Biodegradability shall be determined for all constituents of the packaging, packaging material or packaging component.	Clause reworded to packaging material
TT	4.3.3	1	ed	Suggest removing the word 'following'		Accepted

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GY	4.3.4	1	te	The percentage of organic carbon expected in the whole item may be too high. Persons might find it difficult to satisfy this requirement.	60% of the organic carbon must be converted to carbon dioxide by the end of the test period, when compared to the positive control (according to ASTM 6400)  Guyana has withdrawn the comment	RPT notes the withdrawal of the comments
BB	4.3.5	1-2	ge	The inclusion of this clause is a great addition to add a level of responsibility and accountability.	None.	Noted

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ВВ	4.3.5	2	te	Has a weekly/monthly/yearly limit (or any suitable	Possible inclusion of a "per time-period" limit for	Not Accepted
				timeframe limit) been considered for those using	organic constituents.	
				relatively high volumes of the materials with organic		Biodegradable
				constituents, or maximum limits set per timeframe?	Explanation Provided	packaging can be
				Understandably, this could prove difficult to regulate,	The clause mentioned a max of 5%, so my	constituted from
				but could possibly add another layer of accountability.	thoughts at the time were just about if there's an	several different
					entity with a high volume of materials (e.g. 5% of	types of organic
					1,000,000 is larger than 5% of 1000 of any units),	materials used by
					by extension even though the organic constituents	the manufacturers
					that "do not need to demonstrate biodegradability"	in varying
					shouldn't exceed a "low percentage" of 5%, that 5%	quantities. The
					could still be quite large in some cases. If then we	combination of
					have a high level of these	these will
					organic constituents/micropollutants getting into seawater for example, larger volumes would be	determine
					more impactful/harmful, especially over shorter	biodegradability
					periods e.g. dumping 1 bag of garbage into the sea	which
					every quarter of a year vs dumping 4 bags in 1	manufacturers are
					quarter and please excuse my terrible example,	required to prove
					as I surely don't support that dumping. So my	as per the requirements
					thoughts were about considering a limit per	within the
					timeframe e.g. no more than 5% per quarter etc.	standard.
					The second secon	Stanuaru.
						Diedegradability is
						Biodegradability is neither dependent
						on the volume or
						weight of product
						that is being used
						or sold or the time
						period over which
						it is used or sold. It
						is based on the
						individual
						packaging material
						itself.

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MB 1	Clause No./ Subclause No./ Annex / Figure / Table	Line Number	Type of com- ment 2	Comment (justification for change) by the MB	Proposed change by the MB	RTC observations on each comment submitted
						Time limit for the use and quantity of the material is an issue for conformity assessment and should be determined on a Member State level
TT	4.3.6	1	Те	The term "material product test samples" or "material product" was not defined. It is not clear whether "material product test samples" has the same meaning as "composts" in 4.4.	Use the terms in such a way that the meaning is clear. Consider an explanation of the term "material product test samples".	Clause reworded
TT	4.3.6		Ge	Material product test samples shall not be subjected to conditions designed to accelerate biodegradation, prior to testing in 4.3.1  This statement is not clear. Does this mean that the product test samples must be stored in a specific way prior to analysis? If so, presumably the test method will specify the appropriate storage conditions for samples and this should be referenced.  Clarify statement.	Need to reword to clarify that the product which is to be tested should not be subject to any conditions that will accelerate the rate of biodegradation and so make the product compliant to the testing.  1. Clarify what is the material test sample  2. Clarify the pre-requirement for the testing	Clause reworded
TT	4.4			An additional point could be added.	Include: In order to compost satisfactoily, a product should demonstrate the following three (3) characteristics: (1) proper disintegration during composting; (2) adequate level of inherent biodegradation; and (3) no adverse impacts on the ability of composts to support plant growth	Accepted.
TT	4.4.1	2	Ed	The sub-clause referred to in the sentence (4.4.4.1.2) should read 4.4.1.2.	Please amend.	Amended as indicated

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SR	4.4.1	2	ed	The subclause 4.4.4.1.2 to which is referred to in the text does not exist.	It should be changed to subclause 4.4.1.2	Accepted
GY	4.4.1.1	1	te	This requirement is too vague and should contain more detail pertaining to the countries in the region since the document will be governing the members of CARICOM.	Include a table that displays the prescribed concentrations of heavy metals for sludge or compost in each CARICOM member state with one column displaying 50% of the amount, clearing showing the amount of heavy metal that should be in a biodegradable item for that country.	Clause reworded
ТТ	4.4.1.1	1	Те	A definition of "regulated metals" may be required to distinguish from "unregulated metals".	Suggest to define "regulated metals".  Need to include the parameters for the regulated sludges and composts since some countries may not have requirements. Or  Reword so that "regulated' does not have to be used "composts in 4.4.1.1 of the standard"  Additionally, the "regulated heavy metals" should be the same ones stated in Annex A	Clause has reworded to "The substance shall have concentrations of regulated metals as prescribed in Table A.1 of Annex A for composts in the country where the product is sold"

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TT	4.4.1.1	2	Те	The terms "sludges" and "composts" are used but both were not defined. It is not clear whether both share the same meaning in this clause. It is not clear whether the term "composts" referred to a packaged product, a sample from a composted pile, or the entire composted pile.  Since this standard will be making recommendations for the heavy metal component of the compost, is it necessary to have sludges included. Either remove sludges or define it.	Suggest to define "sludges" and "composts" as follows: Either  1. semi-liquid (or semi-solid) residue or solids separated from suspension in a liquid in industrial processes and treatment of sewsage and waste water ISO/TR 27912:2016(en), 3.72  Or  2. biomass and inert matter produced in the aerobic treatment of waste water by the growth of bacteria and other microorganisms in the presence of dissolved oxygen ISO 18749:2004(en), 2.1  Compost organic soil conditioner obtained by biodegradation of a mixture principally consisting of various	Clause reworded – see above  Accepted
					organic material and having a limited mineral content ISO 21701:2019 (en), 3.1	
TT	4.4.1.1		Те	The assumption is being made that limits for metal toxicity in compost are established in all countries that sell compost. In the event that this is not the case, is there a minimal standard/level that can be utilised?		Clause reworded – see above
TT	4.4.2	1	Ed	The term "tested materials" was interpreted to refer to "packaging materials". It is not clear whether "tested materials' referred to requirements in 4.4.1.	Suggest to refer to the sub-clauses which are applicable to 4.4.2. "The tested materials, at 4.4.1(4.4.1.1.and 4.4.1.2) shall not	Accepted

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TT	4.4.2		Te	Shall (use shall instead of must) What are these unacceptable levels of metals? Are they the same as in Annex A.	Clarify to what unacceptable levels of regulated meals the subclause is referring.	Clause 4.4.1 reworded with reference made to Table A.1 in Annex A
TT	4.4.6 and 4.4.7		Ed	These are sub-points of 4.4.5 on Exemptions and should be numbered accordingly.	Re-number to 4.4.5.1 and 4.4.5.2.	Accepted
TT	4.4.7			If the product is accepted without testing, it should be clear what criteria will be used to determine that the product is biodegradable	Clarify the criteria to be used in the determination of biodegradability/compostability for exempted products.	Accepted
GY	4.4.7	2	ge	The list of materials to be exempted without testing is it an exhaustive list? Provision should also be made bamboo, coconut fibre, cassava etc.	Indicate that list is not exhaustive and include other natural material exempted by the competent authority.	Noted. The clause indicate "such as" which indicates examples and other material meeting the criteria can be used
ТТ	5			It is not standard to have the timeframes on the label as it is inherent in the certification as proven by the tests for compostability and biodegradability.		Clause reworded to include "Where individual products are not able to accomodate adquately the criteria in the labeling, the criteria shall be placed on the bulk package"

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MB 1	Clause No./ Subclause No./ Annex / Figure / Table	Line Number	Type of com- ment 2	Comment (justification for change) by the MB	Proposed change by the MB	RTC observations on each comment submitted
GY	5.1	1	ge	What about bio-plastics? Some materials are labelled bio plastics but only degrade under specific conditions.	Indicate where the standard would consider bioplastics or whether they would fall into the category of oxo – biodegradable.	Bio-plastics will be considered once they meet the requirements of the standards
MS	5.1	1	ge	added recommendation as a number of products (plastic bags and food contains) imported claim to be biodegradable/compostable when it clearly does not reach the recognised standard timelines. This is very misleading to retailers and consumers.	The use of 'biodegradable' or 'compostable' must only be used if the product is within the recommended timeline and the test is carried out in the approved environment.	Noted. Standards is explicit on the requirements needed to label the product as biodegradable or compostable as per reference documents
DM	5.4		Te	All single use bags shall be labelled as biodegradable or compostable and shall carry a certification mark or any other mark required by the Competent Authority. The Plastic resin identification code [Triangle with material number in it (for example #7 and PLA)] should be included on the bag.	All single use bags shall be labelled as biodegradable or compostable and shall carry a certification mark, Plastic resin identification code, or any other mark required by the Competent Authority	Accepted
GY	5.4	1		"Single use bags"  Other single use items are frequently used also and should carry a certification mark.	List other single use plastic items that should also be branded with the certification mark.	Not accepted List would be too long.
LC	5.4		Ed.	American spelling of the word "labeled"	Correct spelling to "labelled".	Accepted
TT	5.4		ed	The correct term used in standards development is National Competent Authority.		"National" added to clause
DM	5.5		Те	Compostable items should be included in this clause. Nothing mentioned for this type.	All biodegradable and compostable products manufactured, imported or offered for sale shall be legibly labelled with the following requirement	Accepted

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MB 1	Clause No./ Subclause No./ Annex / Figure / Table	Line Number	Type of com- ment 2	Comment (justification for change) by the MB	Proposed change by the MB	RTC observations on each comment submitted
TT	5.5.a)		te	What deems packaging food grade and also what will be done to remove harmful packaging from the market.  A material that is permitted to come in contact with food, it doesn't necessarily mean that it is food-safe. Food-safe means that the food-grade material is also fit for purpose for its intended use and will not create a food-safety hazard. For example, it may be fit for purpose to use a food-grade container to hold a dry ingredient but that same container may not be fit for purpose to be used to hold a hot liquid.	1. Include a definition for food-grade: material that is used to construct food contact equipment and utensils and which are scientifically proven to be inert, non-toxic, stable, and therefore will not contribute to contamination of the food (from: National Standard – GMP for the Food Industry)  2. Reword as follows:raw materials used for products shall be food safe and of food grade quality;	Not accepted. This definition refers to equipment and utensil as opposed to the material used to construct the packaging material.
TT	5.5.a)		Те	How can this (food grade) be verified?	Include a means of verifying food grade materials.	Not accepted. Refer to the definition of food grade.
TT	5.5.a)			What is the definition of food grade?	Definition: material that is used to construct food contact equipment and utensils and which are scientifically proven to be inert, non-toxic, stable, and therefore will not contribute to contamination of the food	Not accepted. This definition refers to equipment and utensil as opposed to the material used to construct the packaging material.

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ТТ	5.5.a)			Food grade vs food safe There is a difference between food grade and food safe. Food grade means that it is safe for contact with food, food safe refers to the functionality. A material may be food grade but it is not food safe because, for example, it is used for hot beverages when this was not the intended use. The emphasis of the requirement should be on the final product which will be used by the consumer.	Reword for clarity – "products shall be of food grade material and be food safe"	Accepted
TT	5.5 (b)		Те	The definition of disintegration does not make mention of composting so this section could be misconstrued as the time taken to disintegrate from the date of manufacture  It is not clear where this information is to be sourced. Consider expanding to indicate if this is to be provided by the supplier or if this is a part of the testing process.  The term "time to disintegrate" seems inaccurately used here as the timeframe of 9 months given does not correspond with the information previously provided. Further, in the notes the term also then references both time to disintegrate (which is given as 3 months) as well as biodegradation (6 months), which is conflicting.	Reword for clarity "Time to disintegrate as (required) at 4.2 –"  Consider changing "time to disintegrate" to "time to compost" or a more accurate term. To which time is this requirement referring.	Clause has been deleted. Time to disintegrate or decompose is covered within the requirements outlined in the reference documents and is verified by regulatory body prior to product being placed on the market. This does not prevent the manufacturer from including the information on the label if they so wish.

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TT	5.5.b)		Те	The terminology used here is not consistent with the rest of the document. In 4.2.2, the acceptable time frame for disintegration is identified as 84 days. In 5.5.(b) the time frame for disintegration is given as 9 months and conflicts with 4.2.2	The time frame for disintegration should be consistent, suggest retain 84/90 days throughout.	Clause has been deleted. Time to disintegrate or decompose is covered within the requirements outlined in the reference documents and is verified by regulatory body prior to product being placed on the market. This does not prevent the manufacturer from including the information on the label if they so wish.
TT	5.5.b)		Те	It is <b>not</b> necessary for the timeframe for disintegration to be included on each (single) biodegradable product. This is not common practice. This information can be provided to the product regulator.  The composting standards are known and we should be using "time to compost" not "time to disintegrate." With no ability to test quality of compost this can create greater exposure to micro particles.	Include this information on the outer packaging of the bulk items, or require an insert or pamphlet to be included within the outer box of the bulk items.	Introductory clause for 5.5 reworded to indicate when information can be placed on bulk package

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П	5.5-C		te	Clarify the meaning of microwave safe or define what would qualify a product as being microwave safe. What deems a product microwaveable safe, many paper based and resin based products contain harmful chemicals which migrates into foods when heated even if the physical integrity of the package remain sound.  An indication advising if a product is microwave safe is required but it is also noted that not because a product does not plasticize/melt/deform in a microwave does this deem the product as microwave safe as some plastics and paper-based products release toxic chemicals when under such conditions without showing any change in their structure	Definition: Material when used in the microwave to heat food, will not break or deform, become too hot to handle, give off dangerous chemicals into the food or air, or cause damage to the microwave  Test Method is required (no suggestions available)	Clause reworded to Microwave safe – there shall be an indication as to whether the container is microwave safe according to the certification requirements of Regulatory Authority;
DM	5.5	g	Ge	Requirements for labelling should be differentiated between single/individual product and boxes. For example, "Each container shall be coded or uncoded to identify the producing factory and the lot, should be a requirement for the boxes or outer package.	Each <b>outer</b> container shall be coded or un-coded to identify the producing factory and the lot.	Accepted and amended to "Each outer packaging shall be coded or otherwise indicated to identify the producing factory and the lot"
DM	5.5	g	Те	It is not economically not viable to put the factory and lot code on each product. A plastic resin identification code should be placed on the product. Change clause to	Each <b>product/item</b> shall be plastic resin identification coded	Not accepted. Some items may not be able to accommodate the codes
DM		h	Te	Include the temperature required as part of storage conditions as some product cannot be stored over a certain temperature such 110°F	Storage condition – there shall be indication of any special storage conditions, <b>including temperature</b> , that may apply	Accepted

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TT	5.5.1		Ge	The information here suggests that these labels are meant to be placed on the outer packaging, either on the case, or on the inner multi-packs, but not on each individual item. The size of the labels indicated here is too large for use on normal items, e.g. PLE food boxes.	In 5.2, distinguish between information/labels that must be placed on EACH ITEM, and those that must be placed on the OUTER PACKAGE of the bulk items.	Noted. Introductory clause amended to say "Where individual products are not able to accommodate adequately the criteria in the labelling, the criteria shall be placed on the bulk and primary package."
GY	5.5. b	1	ge	What are the required controlled conditions?		Clause deleted
TT	6			Make reference to Table 2 in subclauses 4.2 and 4.4 as well.		Accepted - Secretariat to Reference

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ВВ	6.1	Table 2	TE	A measure of the thermal insulation properties must be considered as well.  Explanation  The thermal properties (thermal resistance/resistivity/conductance/conductivity etc.), although those might not count towards the biodegradability of the product, but it will towards usability and safety.  This refers to the complaints from users of some "biodegradable containers" that do not have the features of the standard plastic containers, especially when it comes to heat retention.  At a minimum, the biodegradable products should at least offer the same or better benefits as the non-biodegradable ones		Not accepted The standard concentrates mainly on the compostability and biodegradability of the product. Due to the various components of the variety of alternative products available, it will not be practical to include thermal properties for each of these products
MS	6.1	1	ge	added comment for clarification.	If a product is to be classified as biodegradable, the testing thereof should be done on the product in its final form, not the raw polymeric starting material.	Accepted. Based on previous clause, the standards indicates that testing should be done on final products

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SR	Subclause 6.1/ Table 2	2	ed	Correct reference of the ASTM standards should be made. In the table the standards are referred as: ASTM 6400 ASTM 6868. Here it is written without the "D" in front of the numbers.	All should be written as ASTM D6868 and ASTM D6400	Accepted

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MB 1	Clause No./ Subclause No./ Annex / Figure / Table	Line Number	Type of com- ment 2	Comment (justification for change) by the MB	Proposed change by the MB	RTC observations on each comment submitted
BB			ge	Though guidelines are offered re biodegradeability limits, I thought composition limits would also have been included. By this I mean acceptability re the composition of the materials.  Composition limits  This makes reference to the makeup of the polymer chains and how that may affect biodegradability.  Composition will affect the mechanism of degradation and the conditions required to promote these mechanisms.  e.g. 100 % plant based  Plant based with modification like cellulose acetate  Blend of plant and fossil based  Additives for oxodegradation		Not accepted The onus is on the manufacturer to prove that the product is biodegradable based on the requirements of the standards. It would be onerous on manufacturer to include composition limits. Inclusion of limits would limit innovation in a developing field.

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MB 1	Clause No./ Subclause No./ Annex / Figure / Table	Line Number	Type of com- ment 2	Comment (justification for change) by the MB	Proposed change by the MB	RTC observations on each comment submitted
BB			ge	The times given for degradation depend on the nature of the polymeric materials. The times given seem to be too narrow.		Noted Time to disintegrate or decompose is covered within the requirements outlined in the reference documents and is verified by regulatory body prior to product being placed on the market. This does not prevent the manufacturer from including the information on the label if they so wish.
BB			ge	As we adopt the ASTM etc. standards we should be mindful that our environmental conditions will impact on conversion times and percentage degradation.		Noted

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BB			ge	The standard does not mention applicability to cosmetic packaging which contributes significantly to the plastic load in the environment.		Not accepted The scope of the standards refers to packaging used in food.
				Cosmetic packaging  The bodycare industry has grown exponentially in recent decades and packaging has been adapted to accommodate the market. This market contributes to a significant percentage of plastic wastes with inner scaffolds for product presentation being a significant contributor.  Some new companies are making a commitment to reduce packaging, seek alternative packaging or, being mindful of more recent consumer preferences, shifting to biodegradables.  It is important to include this sector in examining the application of these standards.		

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