Accord Actions in response to Professor Hart's Review of March 2012 Revised Criteria

Accord is pleased to note Professor Barry Hart's overall assessment "*that the changes appear sensible and will result in further improving the effectiveness of the Criteria. These changes increase the overall integrity and scientific credibility of the Criteria*". There were no comments recommending changes to the criteria requirements, rather comments related to editorial suggestions. These are addressed below.

Prof. Hart Comment/s	*Action Taken*	*Rationale*
1. Further clarification is needed regarding whether third-party assessment is conducted on • the individual ingredients vs whole product • the concentrate vs in-use product	i) Accord to edit Note 7 to Table 1 of the Standard Criteria with insertion of the bolded text, as follows: "In recognition that the environment is a highly complex system, expert judgement with full rationalisation and data disclosure may be acceptable for ingredients **or products** that do not meet the ready biodegradation requirements of Table 1." ii) Accord to edit Note 12 to Table 1 of the Standard Criteria with insertion of the bolded text, as follows: "…The assessment is performed on the undiluted ingredients **or whole product**, but in most real-life contexts these components will be diluted prior to product use…" iii) Accord to edit Section 6.3 Human health criteria with insertion of the bolded text, as follows: "…Unless otherwise stated, all human health criteria relate to **ingredients in** the undiluted product concentrate, in recognition of the fact	The three Actions Taken reflect the only places in the Standard Criteria where there was potential for confusion regarding whether the assessment is conducted on the individual ingredients vs whole product, or the concentrate vs in-use product. It is the opinion of the Technical Working Group that there are sufficient references in the remainder of the Standard Criteria to identify the types of data that are acceptable and the manner in which the assessment is conducted. The Standard Criteria contains the following statements (additional underlining added): "6.2 Environmental criteria "Unless otherwise stated, all environmental criteria <u>relate to the in-use product, as per label directions, rather than the product concentrate</u>…" "6.2.2 Aquatic toxicity, persistence and bioaccumulation "Each of the <u>undiluted chemical product components, or the undiluted whole product</u>, must meet the requirements…set out in Table 1." "Specific notes regarding Table 1 "2. Where available, <u>whole-product toxicity test data</u> will be considered in preference to <u>individual component/ingredient data</u>." *[This is also reinforced in point 1 under "Hierarchy of data preferability for Table 1]* "Specific notes regarding Table 1 "3. For <u>component-based assessment</u>, the percentage at which each component is present…"

	that human contact with the product is possible before product dilution…"	"6.2.4 Volatile Organic Compounds "VOC content in the in-use product…is limited to the levels prescribed below…"
2. "Regarding the question of individual ingredients vs total product, the document makes it clear that the individual ingredients are to be assessed. Assessment of the total product as sold would require whole-of-product toxicity testing on every product (given that they can vary in composition quite significantly) – a very costly and unnecessary requirement."	No additional action taken, see above.	There are multiple references in the Standard Criteria to when whole product data is preferred, if available (see above). The Technical Working Group therefore disagrees that "the document makes it clear that the individual ingredients are to be assessed". Prof. Hart's comment that whole-of-product toxicity testing on every product is "a very costly and unnecessary requirement" upholds the flexible design of the R**eco**gnised® Scheme in allowing ingredient data but giving preference to whole product data, if available.
3. "Regarding the question of concentrated product as sold vs the diluted product as used, there is some confusion in the document requiring clarification…"	No additional action taken, see relating to Point 1.	The 3 Actions Taken add the required clarification. Section 6 of the Standard Criteria is divided into two major sections – 6.2 Environmental criteria and 6.3 Human health criteria. Each of these Sections begins with a general statement regarding whether assessment is based on the product concentrate or the diluted product, and include the phrase "unless otherwise stated", indicating that specific criteria within these Sections may not follow this general rule. For specific criteria that do not follow the general rule, this is indicated in the individual cases.

4. “Product concentration…Section 6.2.1 implies that all products (except toilet bowl cleaners, liquid hand soaps, abrasive cleaners and oven cleaners) must be assessed on the concentrated product, while the exception products can be assessed on the in-use products.”	No action taken.	There seems to have been misinterpretation of 6.2.1. This section does not refer to whether assessment is performed on the concentrated vs in-use product; rather it stipulates that all products MUST be concentrated to some degree, with the exception of the product categories specified. “6.2.1 Product concentration “Liquid products must be concentrated to the greatest degree practicable…”
5. “…oven cleaners were added to the categories exempted from the concentration requirement” on the basis of performance, without citing the evidence for this.	No action taken.	The following rationale is included in the Standard criteria regarding oven cleaners: “6.2.1 Product concentration “…Oven cleaners are specifically formulated to achieve a viscosity/clinginess that is critical to product performance.” “There are four categories of products that are exempted from the concentration requirement, with rationale provided for each exemption. Whilst it is true that some of these categories could be formulated in a more concentrated form, the lack of current technology to dispense/use such concentrates could create a barrier to purchase/use. And, whilst product concentration has a number of positive environmental impacts, these become irrelevant for products that the market is not prepared to purchase.

6. Inclusion of an example would help assist understanding of the reasoning for ingredient-based application of Table 1 factoring in the percentage at which each ingredient is present in the formulation (Note 3). Also, Note 3 is not referenced in the Table.	Accord to include the following additional text in Note 3 to Table 1: "For example, if ethanol is present in a formulation at 5% of the total volume, the toxicity assessment by the third-party assessor factors in that there is 5% ethanol – rather than assessing as if the product is 100% ethanol. This is essential in ensuring that component-based and whole product assessments are equitable, because whole product data is by default based upon the sum effects of all individual components at the levels present in the formulation." In addition, the superscript "3" will be added to column 1 of Table 1 as follows: "Acute Aquatic Toxicity[1,2,3]"	The extra information helps add clarity to the reason for component-based assessment factoring in the percentage at which each individual ingredient is present in the formulation.
7. The text in the middle box of Table 1 should be reworded to "without producing degradation products of concern".	No action taken.	The wording of Table 1, column 2 is taken directly from the US EPA DfE General Screen for Safer Ingredients 'Table 3 – Environmental Toxicity and Fate'. It was decided that addition of the word "producing" would not add to the meaning of this text.
8. Note 8 to Table 1 should be reworded to "If the units 'ppm' are to be used they should be defined somewhere in the document relative to mgL^{-1}"	All references to "ppm" will be replaced by "mgL^{-1}"	As "ppm" and "mgL^{-1}" are equivalent units, changing all to "mgL^{-1}"will remove the need to define "ppm" and will avoid confusion.
9. Note 10 to Table 1 should be reworded to "Ingredients added at <0.1% (w/v) in the product"	No action taken.	For some products w/w may be the more suitable unit than w/v.

10. "Is the term 'preservatives' defined somewhere? I interpret this as meaning any level of preservatives is exempt – is this what is meant? Are all preservatives non-toxic?"	Accord to add following definition of 'preservatives' to Section 5 Abbreviations and Definitions: "Preservative: A chemical substance added to a product to prevent spoilage due to microorganisms or undesirable chemical reaction, primarily oxidation."	Preservatives are often toxic as this property is inherent to their function in preventing the growth of microorganisms. However these ingredients are typically used in products at very low levels. Preservatives play a very important role in ensuring the integrity of commercial cleaning products for the duration of their shelf-life, and therefore safeguarding human health by maintaining product integrity and efficacy. It is therefore not the purpose of this Standard to reward products formulated without this class of ingredients. It should be noted that it is only the requirements of Table 1 for which preservatives are exempt – preservatives still need to adhere to the requirements stipulated in the rest of the Standard.
11. Is there a reason why copper is excluded from the list of metals in Section 6.2.3 Dyes and colorants?	No action taken at present. Accord to undertake further investigation of the environmental toxicity of copper and determine at the next annual review whether this metal should be included in the list.	The list of metals to be excluded from dyes and colorants was based upon those stipulated in Section 3.17of the Green Seal Standard for Cleaning Products for Industrial and Institutional Use.
12. Section 6.2.3 (VOCs) should be modified with addition of the underlined text, as follows: "For products outside the above categories, the VOC level requirement for general purpose cleaners will apply, <u>i.e. <10% (w/v) in the in-use product</u>".	No action taken.	It is assumed that the reader will read that the VOC level for general purpose cleaners applies and look to the list of requirements above on the same page. It is unnecessary to repeat the information. Additionally, inclusion of "(w/v)" is not appropriate for all product formats – see item 9 above.

13. There should be modification of the rationale relating to phosphorus, because "while it generally true that diffuse loads of P are greater that [sic] those from sewage discharges, it is also true that these diffuse loads are largely contributed during high flows when the likelihood of algal blooms is very low. On the other hand, the sewage discharge will occur during the year, and it is during low-flow periods that the sewage P is more likely to cause algal blooms in the receiving waterbody."	Accord to amend the rationale relating to phosphorus with inclusion of the bolded text, as follows: "**In Australia,** the majority of commercial cleaning product waste will be treated at a sewage treatment plant. **"As a result, only very low levels of phosphorus from commercial cleaning products reach waterways because phosphorus is removed from waste water to levels that are acceptable to Australian environmental regulators.** **"In addition,** for cases where sewage treatment effluent is discharged to inland waterways, this sewage **generally** contributes much less to inland waterway phosphorus load than diffuse sources, which include agricultural and urban run-off.[2,3] **"It is also thought that extreme weather events, such as storms, lead to the major contributions of nutrients (i.e. phosphorus and nitrogen) to Australian waterways**.[4] **"[3] An estimated 65-95% of phosphorus (reaching Australian waterways comes from diffuse sources, primarily soil erosion. (Source: State of the Environment Advisory Council 1996; NPI 2000. See www.environment.gov.au/soe/2001/publications/theme-reports/water/water02-2a.html)** **"[4] Donnelly, T. H., Barnes, C. J., Wasson, R. J., Murray, A. S. and Short, D. L. 1998, 'Catchment Phosphorus Sources and Algal Blooms – An Interpretive Review', Technical Report 18/98, CSIRO Land and Water."**	Addition of this extra detail helps clarify the situation in Australia relating to sources of phosphorus in waterways and the contribution from cleaning products.

14. That the 'expert judgement' process be better defined in the document.	Accord to specify "expert judgement by the third-party assessor" in every instance where the words "expert judgement" are used.	Addition of this text clarifies that the expert judgement is the domain of the third-party assessor, rather than Accord. Beyond this, it is not appropriate for the Standard Criteria to detail the process undertaken by the third-party assessor. Indeed, Accord necessarily remains at arms'-length from the assessment process, relying on the expertise of the specialist third-party in application of "expert judgement".