March 15, 2024 - Final

APRA Submission to CSA Draft Standard R117 Plastics Recycling: Definitions, Reporting and Measuring (New Standard)

To be added to the first section of the submission

The Alberta Plastics Recycling Association (APRA) is a not-for-profit association that has operated for over 30 years, with a focus on the facilitation of sustainable plastics recycling and the diversion of plastics from landfills. Our members include participants in the full plastics value chain, including resin manufacturers, companies involved in manufacturing plastic products, municipalities, as well as processors and recyclers of plastics. APRA and its members and partners are committed to finding solutions to manage and recycle plastics and to realize the value of the circular economy and keep plastics out of the environment.

Thank you for providing the opportunity for APRA to respond to CSA Draft Standard R117 Plastics Recycling: Definitions, Reporting and Measuring. In preparing our response APRA concurs with many of the responses provided by our colleagues at the Chemistry Industry Association of Canada (CIAC) and acknowledge their support in our responses. Our view is that standards should align to existing standards such as ISO, BNQ and RMS, they should be science-based, and they should consider the economic consequences of their application. We note that significant efforts are underway in other jurisdictions to further develop and refine standards related to recycling. As such it may be appropriate to delay issuance of certain portions of this standard to allow for consistency and harmonization with those standards to ensure this standard is appropriate for use by Canadian companies involved in international trade. For Chemical recycling processes it is important that the views of experts in this field be considered fully in determining standards for those processes. Given the current state of development of Chemical Recycling processes and the limited involvement of chemical recycling experts in the development of this standard it may be more appropriate to delay standards for those processes until the industry matures and additional insights from experts in this field can be secured. APRA remains committed to ongoing collaboration as we work to build a sustainable future for plastics, and we would be happy to meet with you to continue the discussion.

Title Section:

APRA Comments on Title Section: We note multiple spelling and grammatical errors throughout the draft standard.
APRA Recommendation: Please correct spelling and grammatical errors.

Preface Section:

APRA Comments on Preface: The committee developing this standard was not balanced in its representation from an industry perspective which has led to gaps in the technical understanding. It is important to ensure all stakeholders participating in the standards development process have the information and understanding necessary to effectively contribute to the process and avoid unintended consequences.

APRA Recommendation: In future drafting processes related to chemistry and plastics, take initial steps to engage the impacted industry associations, such as APRA and CIAC, to get input on how to best incorporate industry experience and knowledge in the development process.

Section 2: Reference Publications

APRA Comments: Our view is that consideration should be given to other recognized standards to provide consistency and harmonization among standards.

APRA Recommendation: The CAN/BNQ 3840-100 standard (www.bnq.qc.ca/en/standardization/environment/recycled-plastic-content-products.html) should be referenced as it has many implications for the work below, as will be outlined. We also note that the criteria for choosing the current list of reference publications should be provided within the standard and there should be a comment added as to how new and revised standards (such as ICCS+ and RMS, the revised ISO 15270-4 chemical recycling standard and the ISOC standard technical committee (TC308) currently being worked on) will be addressed and incorporated into this standard.

Section 3.1: Definitions

APRA General Comments on Definitions: Several definitions in this section would benefit from alignment with the existing CAN/BNQ 3840-100/2023 standard (http://www.bnq.qc.ca/en/standardization/environment/recycled-plastic-content-products.html). These include the following:

1) Bio-based plastic: "Plastics that are derived partly or wholly from plant-based feedstocks."

APRA Comments: Plants do not comprise all of biology and the definition is too restrictive. The generally accepted definition of bio-based plastic refers to plastic that is derived from plant or other biological material rather than fossil fuels.

APRA Recommendation – Change "plant-based" to "plant or other biological materials"

2) Chemical Recycling: “A process that breaks down polymers into individual monomers, oligomers or other chemical products that can be returned to the manufacture of plastics or other new products“
APRA Comments: This definition should reference the CAN/BNQ 3840-100 standard. Additionally, chemical recycling is typically referred to as “advanced recycling” by industry, and it is not mutually exclusive with activities defined under “physical recycling”.

APRA Recommendation: Use the currently published definition of Chemical Recycling from CAN/BNQ 3840-100/2023 section 5.3.1. Include an additional note or language surrounding the term “advanced recycling”, acknowledging that this is the preferred term used by industry to describe this method of recycling plastics. Clarify that chemical/advanced recycling can, and often does, include purification steps associated with “physical recycling” as defined in this standard.

3) Fuel: “A substance which is combusted to produce energy”
APRA Comments: There should be a common definition of fuel among standards. For consistence and harmonization, this definition should align with that used in other Canadian standards and regulatory processes.
APRA Recommendation: The CAN/BNQ 3840-100 standard includes a definition for “Fuel” and should be used and referenced here.

4) Mass balance: “Mass balance is a chain of custody approach that allows tracking of the net amount of materials as they move through a system or supply chain and ensures an appropriate attribution of these materials to the products based on auditable bookkeeping.“
APRA Comments: Mass balance is an engineering term to describe the net flow of material (mass/time) into, out of, and accumulating within a system or process boundary.
APRA Recommendation: BNQ uses an adapted definition of “mass balance model” referenced from ISO 22095 and that definition is more similar to the one used here and should be adopted.

5) Physical Recycling: “The use of industrial processes (solvent, heat, steam, pressure) to remove contaminants and additives from polymers such that the polymers can be directly returned to the manufacture of plastics with their polymeric chemical structure intact”
APRA Comments: The term “physical recycling” is not widely used by industry. The activities described under this definition are typically called “purification” and fall under the umbrella of advanced recycling processes. It would be helpful to have a clearer understanding for the need for this term and the distinction of this term and its differentiation from "purification" which falls under chemical/advanced recycling.

APRA Recommendation: See CAN/BNQ 3840-100/2023 section 5.3.2 for the relevant definition for “purification” in the plastic recycling context.

6) Plastic: “A material consisting of a polymer to which additives or other substances may have been added, and which can function as a main structural component of final products, with the exception of natural polymers that have not been chemically modified. [Directive (EU) 2019/904]“
APRA Comment: Plastic is a material and is still plastic even if it is not a structural component of a final product. This definition would be better suited to “plastic product”.
APRA Recommendation: CSA must bring clarity to the use of the terms plastic product (and how it differs from plastic) and natural polymer

7) Recycling feedstock: “Post-consumer or post-industrial material that is collected and serves as an input to material processing and reclaimer facilities.”
APRA Comments: “Pre-consumer” and “post-industrial” are synonyms, but the former is currently seeing more frequent use including in recent government publications and the CAN/BNQ 3840-100/2023

standard (and in the definition of “targeted material” within this standard). government publications wherever possible.

APRA Recommendation: CSA must ensure that all definitions in the Standard are consistent across other regulatory and Standards, such BNQ standard, work within Canada.

8) Secondary materials:" A material that is derived from products or packaging that have undergone at least one prior lifecycle"
APRA Comments: It is unclear at what point the product or packaging from which the secondary material is derived is considered to have completed at least one "lifecycle". Additionally, it is unclear if "Secondary material" and "recycled material" (as used throughout this standard) are synonyms or if one is a subset of the other. Are blended pellets of recycled material and virgin resin wholly or only in-part considered "secondary material"?
APRA Recommendation: To avoid confusion, we recommend having a clearer differentiation between secondary and recycled material terms and apply that distinction throughout the standard. We also suggest that additional clarity be added to the use of the term plastic product and how it differs from plastic and natural polymer.

Section 4.1: Definition of recycling calculation point

APRA Comment: The figure indicates that the calculation point for pyrolysis is after the steam cracker. Our view is that calculation point is a term that is more suitable for mechanical recycling than for pyrolysis.
APRA Recommendation: Pyrolysis would be better evaluated using a methodology such as mass balancing with attribution. While we do not agree that use of calculation point is an appropriate methodology for pyrolysis, if it is used then it should be placed immediately after the pyrolysis unit to better reflect the recycled product produced.

Section 4.2: General Measurement Rules

APRA Comment: While export of plastic is mentioned, it is unclear from this section how importing plastic waste for recycling should be handled under this standard.
APRA Recommendation: We recommend that any measurement methodology suggested be evaluated to ensure that it can be performed effectively and efficiently (pre-extrusion weighing may not be easily achieved). We suggest incorporating typical measurement points and weighing practices used currently by recyclers and utilizing periodic bale audits, when needed, to determine averages that might be required for a more practical method to adopt.
We also recommend including mention of waste imports for recycling and how this should be measured regarding the standard.

Section 4.3: Chain of Custody

APRA Comment: CAN/BNQ 3840-100/2023 adapts the same material from ISO 22095. Duplication of effort and inconsistency between CSA and BNQ should be avoided wherever possible.
APRA Recommendation: Ensure that this section agrees with, and references the adaptation of ISO 22095 material in the CAN/BQ 3840-100/2023 standard.

Section 4.4: Mechanical recycling – Flake Production only

APRA Comment: The term "reprocessors" is not one that is typically used to describe a segment of the plastics value chain, and it is not explicitly defined anywhere in the standard. Usually "recycler" is used instead.
APRA Recommendation: Change the term "reprocessors" to "recyclers" or add "reprocessors" to the list of definitions.

Section 4.7: Chemical Depolymerization

APRA Comment: Batch processes are specifically mentioned in the second sentence of this section. There is no reason chemical depolymerization cannot occur in semi-batch or continuous configurations.
APRA Recommendation: Remove “batches of” from the sentence. This extends the wording so that no processes are unintentionally excluded.

Section 4.8: Gasification

APRA Comment: The method for calculating recycled content of a gasification process is explicitly covered under CAN/BNQ 3840-100. BNQ defines gasification as a “conversion” (section 5.3.4). Care must be taken not to duplicate efforts or introduce inconsistency between these standards.
APRA Recommendation: Ensure this section aligns with and references the published CAN/BNQ 3840-100/2023 standard.

Section 4.9: Pyrolysis and Hydrothermal Treatment

APRA Comment: The method for calculating recycled content of a pyrolysis process is covered under CAN/BNQ 3840-100. BNQ defines this as a "conversion" (section 5.3.4).
APRA Recommendation: Ensure this section aligns with and references the published CAN/BNQ 3840-100/2023 standard.

1 Section 6.0 : Rules on reporting of metadata

APRA Comment: Our view is that reporting requirements should not be included in voluntary standards and instead should be provided in applicable regulations and legislation.

APRA Recommendation: Remove this section and allow any appropriate regulations or legislation to determine the relevant reporting rules.

Annex A.:1 Methods for Recycling Rate Denominator

APRA Comment: This Annex is labelled as "not mandatory", but the word "shall" is used in subsection 1) b) to denote a requirement.

APRA Recommendation: Change "shall" to "should" to be consistent with the rest of the Annex