

7th July 2020

Ms Nicola Powell
Director
PFAS Taskforce and Minamata Convention
Department of Agriculture, Water and the Environment
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Dear Ms Powell,

Subject: PFAS Taskforce Consultation Response to Questions

Thank you for the opportunity for the Royal Australian Chemical Institute to participate in the Australian Government consultation on the National PFAS Position Statement (the Position Statement).

Who is the Royal Australian Chemical Institute?

The Royal Australian Chemical Institute (RACI) is a professional membership organisation for professional chemists and chemical sciences across Australia. It acts both as the qualifying body in Australia for professional chemists, and as a learned society promoting the science and practice of chemistry. The RACI has approximately 4000 members who work as scientist, educators, laboratory technicians, researchers, health and safety profession across education (secondary and tertiary); research, government and industry.

The RACI represents and caters for the professional needs of the full range of chemists and those with an interest in chemistry, providing targeted activities and services in the following areas:

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- Analytical & Environmental
- Carbon
- Chemical Education
- Electrochemistry
- Health, Safety & Environment
- Industrial Chemistry
- Inorganic Chemistry
- Material Chemistry
- Medicinal Chemistry/Chemical Biology
- Organic Chemistry
- Physical Chemistry
- Polymer Chemistry
- Radiochemistry

Response to the consultation document questions.

The following three questions were put to the membership and I have attached the responses as Appendix 1.

Additional Concerns

Members also voiced a number of concerns as outlined below:

1. Definition

The definition being put forward in the National PFAS Position Statement as being either long chain and short chain PFAS appear to be an abbreviated form of what has been defined based on the OECD Guidelines and the Stockholm Conventions i.e.

- **Long-chain PFAS:** Perfluorosulfonates with six or more carbons, perfluorocarboxylic acids with seven or more carbons, and their precursors

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- **Short-chain PFAS:** Perfluorosulfonates with less than six carbons, perfluorocarboxylic acids with six or less carbons, and their precursors.

However, the problem with these broad definitions is that these definitions can also capture non-bio-persistent compounds (containing Fluorine) which are often found in pharmaceutical preparations including anaesthetics and other significant medications. Thus, while the intention to reduce/eliminate bio-persistent forms of PFAS is commended, by extending the definition of PFAS beyond this category, is not necessary, and would have significant ramifications within the pharmaceutical and other related industries.

2. Importation of PFAS into Australia

Members also identified that Australia does not currently manufacture PFAS, but imports PFAS. This has raised the questions, of the importance of scrutiny by the Office of Chemical Safety through the Australian Industrial Chemicals Introduction Scheme (AICIS) of imported chemicals, and the reliance and acceptance of overseas risk assessments and other data in their determinations.

3. Focus on Firefighting Foams rather than other sources of PFAS.

Members are also concerned that there has been a targeting of specific products containing PFAS i.e. firefighting foams. However, the membership has identified other every day products which seem to have escaped the eyes of the regulators including (but not limited to) the following items which potentially end up in landfill.

- O-rings and seals (e.g. Viton) which contain per-fluorinated elastomers. These could degrade to generate PFAS materials. These are used across industry - vehicles, medical equipment, aerospace etc.
- Per fluorinated membranes and critical component in advanced membrane fuel cells for the use and production of hydrogen and in the chlor-alkali industries.
- Per-fluorinated lubricants for advanced operation of high specification engines and turbines.
- Per fluorinated coatings to minimize friction (wind turbine blades), water resistance (electronic components), and to ensure cleanliness and ease of sterilization in hospitals and the like.
- Plastic like – rain coats
- Liquid repelling material Raincoat
- Paper Wrist Bands
- Coatings on paper plates.

Many of these products are imported from overseas, with a large percentage coming from China, India and other Asian countries, without regulation.

While the RACI supports the move to reduce the use of PFAS in Australia, it is important that ensure that any regulations and management approaches are based on those compounds which are bio-persistent and not target non-bio-persistent forms.

For any questions in relation to this response please contact myself on +61 (03) 9328 2808 or roger.stapleford@raci.org.au

Yours sincerely



Roger Stapleford
Chief Executive Officer
Royal Australian Chemical Institute

Cc President Elect Professor Steven Bottle –
Chair HSE Division - Dr Neale Jackson
David Springer- Board Member

APPENDIX 1 RACI RESPONSE TO PFAS TASKFORCE CONSULTATION QUESTIONS

1. Do you use products that contain PFAS? If Yes, can you please provide details (i.e. in manufacturing process, firefighting foams, research etc)

- Research –
 - removal and transformation of PFAS in the environmental samples
 - Developing analytical standards for PFAS analysis
 - PFAS contaminated biosolids
 - research using pure form of PFAS. Specifically, PFOS, PFOA, PFBA, PFPeA, PFNA, PFDA.
 - Testing contaminated soil and water containing a range of PFAS. Mostly PFOS and PFHxS.
- The testing of contaminated soils and water
- Firefighting foams
- Repackaging and labelling for intrastate and interstate transport of bulk loads (1000L-37,000L)
- Waste Disposal - including the:
 - decommissioning and flushing systems containing PFAS
 - disposing of dilute and concentrate firefighting foams
 - Removal and transformation of PFAS in the environmental samples
 - Organising required testing for disposal compliance.
- As an Industrial Chemist I had to deal with PFAS containing material. I have produced Analytical reports based on the laboratory analysis.

2. Have considered PFAS-free alternatives? If Yes, what the results were? If No, are there any particular issues or reasons that you have not considered using a PFAS free alternative.

- we are transitioning to fluorine free.
- Currently investigating PFAS contamination
- I take PFAS to mean Per Fluorinated Alkyl Substances. This definition goes beyond per fluorinated alcohols used as fire-fighting foam.
- To my knowledge there is no fluorine chemical industry in Australia. All PFAS's are imported. PSAFs are advanced materials producing specifically desired effects or providing a technological solution that may be unavailable bon mon PFAS materials.
- They are often found within imported equipment and the user may be unaware that the equipment contains PFAS as outlined. Examples are:
 - O-rings and seals (e.g. Viton) which contain per-fluorinated elastomers. These could degrade to generate PFAS materials. These are used across industry - vehicles, medical equipment, aerospace etc.
 - Per fluorinated membranes and critical component in advanced membrane fuel cells for the use and production of hydrogen and in the chlor-alkali industries.
 - Per-fluorinated lubricants for advanced operation of high specification engines and turbines.
 - Per fluorinated coatings to minimize friction (wind turbine blades), water resistance (electronic components), and to ensure cleanliness and ease of sterilization in hospitals and the like.
- As a disposal company we had advised companies to switch over to fluorine free around 5yrs ago. There was a strong resistance, SDS for Firefighting foam would invariable say "Biodegradable" and the manufacturers wouldn't say what was in the product, though it would be listed as "non-hazardous ingredients", analysis would show large amounts of PFOS/PFOA as testing was expanding most other PFAS moieties that labs were able to test for as well.
- We are doing research on PFAS sensing to develop portable sensors for detection in environmental waters.
- Until recently, PFAS issue was not discussed in detail. One the public awareness has been made people started paying attention on PFAS containing material. Therefore, public awareness will play a big role in preventing the PFAS containing material.

- Yes. I always consider siloxane-silicate polymers and aluminate alternatives.
- Aiming to reduce PFAS in biosolids and recycled water sources
- No - PFAS compounds are a requirement of the PFAS analytical method.
- The main objective of the research is to develop methods which can aid in the extraction and detection of the PFAS compounds.
- Research involves developing methods for analysis and adsorption, alternatives are not applicable.
- yes, for method optimisation we use SDS, but for validation we have to use PFASs
- My research is hoping to determine remediation solutions for PFAS.

3. It is recognised there are many members may have questions regarding government-led initiatives to reduce PFAS in Australia, including the National PFAS Position Statement. Do you have any questions??

- What is the position for laboratories analysing PFAS? How do we get analytical standards?
- As I work in an Environmental Consultancy, we are regularly dealing with the problem of disposal of PFAS contaminated soils and groundwater. The PFAS contaminated sectors of the environment is an issue impacting major projects and costing billions of dollars to address.
- PFAS residues affect major defence and infrastructure sites and projects around Australia.
- Yes - there needs to be an openly accessible, technically an un-obtuse definition of "PFAS" so we (as chemists) know what is and what is not being referred to when the term "PFAS" is used in policy and law. Currently terminology is being used incorrectly and interchangeably, leading to a lack of certainty as to what is being discussed, and what substances may be subject of any controls introduced to addressed PFAS issues.
- I conduct research into the environmental chemistry and the toxicology and ecotoxicology of PFAS. I would like to know about any government-led initiatives in these areas.
- As far as fire-fighting foams are concerned, the PFAS materials are very effective and offer advance safety over alternatives. This may be critically important in jet engine operations (ADF) and removal may place ADF in serious jeopardy especially if an enemy knew the ADF was using sub-standard equipment - as the ADF been asked to comment on this?
- Finally, the thrust of the proposals is limiting the use of persistent organic chemicals in the environment. Any fluoro-compound may come into this category including the use of fluoro-polymers in roof top solar panels. Is the Australian government aware of this?
- If there is no acceptable level of discharge to sewer for PFAS and low level analysis is required with detection limits of 10parts per trillion (Qld.), how are activated bio-sludge plants (industrial waste water treatment facilities/ sewage treatment plants) meant to comply?
- Actually, this is a very good initiative to have a National PFAS Statement and need to collect information from people who are involved in PFAS and related fields.
- PFAS compounds are not necessary since there are useful alternatives for almost all applications.
- Is there evidence PFAS is bad for you?
- What are sources of PFAS input to terrestrial and aquatic environments?