Per- and poly-fluoroalkyl substances (PFAS) are a group of more than 9,000 substances that have been produced since the 1940s and used in a broad range of consumer products and industrial applications. The essential use concept by Cousins et al. (2019) is a tool that can guide the phase-out of PFAS and potentially other harmful "substances of concern." For PFAS, given that they are basically all are extremely persistent, we have to worry about effects long after their intended use. Due to the large number of PFAS, and uncertainties about which exact compounds are manufactured and used, and chemical-by-chemical risk assessment is impractical, expensive and unrealistic to prevent further pollution. . Current chemicals management typically relies on this risk-based approach, whereby society performs chemical-by-chemical risk assessments on those chemicals of highest concern, and only those chemicals with demonstrated risks are regulated. Experience has shown, however, that such a time- and resource-intensive risk-based approach is impractical, given the vast numbers of chemicals in use and lack of information on most of them. The concept of essential use advocates for a more holistic approach to assessing the use of chemicals of concern, by asking whether those substances, such as PFAS, are functionally necessary within a given product or manufacturing process. If alternatives (i.e. chemical or engineering alternatives) exist, the use of these substances of concern is non-essential, and can be phased out, though alternatives assessment might be needed.
We derived 3 categories:

(1) "Non-essential" Uses that are not essential for health and safety, and the functioning of society. The use of substances is driven primarily by market opportunity.
Examples: Dental floss, water-repellent surfer shorts, ski waxes.

(2) "Substitutable" Uses that have come to be regarded as essential because they perform important functions, but where alternatives to the substances have now been developed that have equivalent functionality and adequate performance, which makes those uses of the substances no longer essential.
Examples: Most uses of AFFFs, certain water-resistant textiles.

(3) "Essential" Uses considered essential because they are necessary for health or safety or other highly important purposes and for which alternatives are not yet established.
Examples: Certain medical devices, occupational protective clothing.

The concept of essential use is meant to facilitate the phase-out of PFAS from non-essential uses, and spur innovation to develop safer alternatives to currently "essential" uses.

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see attached file