BERGESON & CAMPBELL PC

Lynn L. Bergeson is managing partner of Bergeson & Campbell, P.C. She can be contacted on +1 (202) 557 3801 or by email: lbergeson@lawbc.com.

Published by Financier Worldwide Ltd

EXPERT BRIEFING March 2022

PFAS: making sound investment decisions

BY LYNN L. BERGESON

The ubiquity of per- and polyfluoroalkyl substances (PFAS) and the manufacturing sector's decades-long reliance on them to impart functionalities in a dizzying array of products put the investor between the proverbial rock and a hard place. PFAS varied chemical properties make the broad categorisation of 'PFAS' into a monolithic category of 'forever chemicals' chemically and scientifically questionable.

For better or worse, however, that is exactly what is happening today, and distinguishing between commercially promising and commercially risky PFAS chemicals is challenging. Yet, the ability to make this distinction could be the difference between a great investment and a commercially disastrous one. This article explores this difficult assessment, provides essential information on PFAS, and offers some suggestions to avoid making bad investment decisions.

PFAS

Invented in the 1940s, these synthetic chemicals, some 4000 of them according to the US government, are used to make fluoropolymer coatings and products that resist corrosion, grease, water, stains and heat. These properties make PFAS useful in an impressive diversity of consumer and industrial applications, including non-stick coating in cookware, stain-resistant clothing, furniture, food packaging, adhesives, electrical insulation wire, tank linings and firefighting foams.

The carbon-fluorine bond is the chemical backbone of PFAS and one of the shortest and strongest bonds known to exist. This bond imparts the functionality that make PFAS so resistant to water, heat, chemical action and stain. The bond also makes PFAS highly resistant to breakdown, hence the name 'forever chemicals'. PFAS tend to persist in the environment, some move freely through soil to contaminate drinking water supplies, and some bioaccumulate (build up) in fish and wildlife. People can be exposed to PFAS by consuming PFAS-contaminated water and food or by using products that contain PFAS.

In 1999, the US Centers for Disease Control and Prevention (CDC) measured at least 12 PFAS in human blood serum, although at increasingly lower levels, indicating widespread exposure to these PFAS in the US population. It is widely believed that PFAS contamination in humans and in the environment is pervasive globally. While the measurable presence of a substance in serum alone tells us nothing about whether that presence causes an adverse effect, it is clear people do not want PFAS to contaminate their bodily fluids or groundwater supplies. The term 'toxic trespass' vividly conveys the sentiment here.

PFAS as an emerging contaminant

It is not entirely clear where the expression 'emerging contaminant' comes from. Contaminants so labelled tend to share several characteristics: the science on

them is evolving, potential exposure or contamination is pervasive, traditional governance systems tend to be lagging with respect to assessing their status, communicating risk about them is challenging and there is at least some evidence that suggests exposure to them may cause adverse effects. PFAS checks all of these boxes. About a decade or so ago, manufactured nanomaterials were 'emerging contaminants', a moniker as misplaced today as it was then.

A high-profile case about 20 years ago got the ball rolling. Plaintiffs, landowners, sued a certain chemical manufacturer of two of the most notorious PFAS: perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). They alleged injuries from contaminated drinking water from a PFOA manufacturing site located in Parkersburg, West Virginia. The court later certified the plaintiffs as a class, and the parties settled in 2004. The settlement included an agreement to create a Science Panel to evaluate potential links between exposure to PFOA and PFOS and adverse human health effects. In 2011, the Science Panel determined a probable link between PFAS exposure and certain diseases, including kidney and testicular cancer, thyroid disease and other adverse health effects. The 2019 film 'Dark Waters' was Hollywood's fictionalised depiction of the case.

Since then, litigation has exploded. In addition to suing manufacturers of PFAS, targets now include a growing number of product manufacturers that use or used PFAS in their products. Cookware, carpet, furniture and firefighting foam manufacturers (and users) are included, and many others. PFAS-containing aqueous film-forming foams (AFFFs) in particular have been the target of much litigation. Claims include property damage and bodily injury, or the likelihood of future injury. Plaintiffs typically seek compensatory damages, medical monitoring, punitive damages and injunctive relief.

PFAS detractors have been very successful in influencing federal and state governments to address PFAS contamination. At the federal level, the Biden administration has significantly strengthened its commitment to addressing PFAS. It issued its 'PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024' last October. The Roadmap outlines dozens of regulatory initiatives intended to address PFAS contamination. Congress has gotten into the act, as several measures included in defence appropriation actions have resulted in targeted regulatory actions implemented by the US Environmental Protection Agency (EPA).

The most notable action was last year's proposed Toxic Substances Control Act (TSCA) Section 8 reporting rule that requires "each person who has manufactured" a PFAS since January 2011, in any quantity, without exemptions, to report certain information to EPA. As written, the proposal would have staggering implications both for those required to report and for EPA. The agency will be required to review and take action on an avalanche of information submitted in response to the rule, much of which is expected to be of little value as submitters struggle to find meaningful information in old records (where available) that were not intended to capture such information. Similar initiatives are emerging in the European Union (EU), the UK and elsewhere globally, but less aggressively.

Problems PFAS cause investors

Legal practitioners, armed by science, have been quick to note that PFAS are extraordinarily diverse and there is no 'one-size-fits-all' approach to regulation. PFAS detractors have been less discriminating. A rigorous commitment to science is essential to ensure PFAS that enable life-saving medical devices, facilitate low-emission vehicles, or serve some other laudable societal purpose are recognised in their own right and not thrown overboard purely on the basis of a carbon-fluorine bond.

The inclusion of thousands of chemical substances in a single, undifferentiated group for any purpose is scientifically unsupportable. Each PFAS has its own unique chemical identity and toxicological profile, and structural differences in carbon chain length, degree of fluorination, chemical structure, and chemical functional group will have significant implications for the substance's mobility, fate, and degradation in the environment and toxicity in biological systems. While some grouping is scientifically supportable, PFAS are far from fungible.

The public tends to ignore these important differences. They are aided by government agencies and other detractors that do little to blunt the relentless push to categorise all PFAS as 'forever chemicals', regardless of the diversity of important chemical identity characteristics or chemical-specific properties undeserving of this prejudicial label. After all, elements, including oxygen, iron and lead, are 'forever chemicals'. What can make an element like lead potentially harmful is not its longevity, but its other properties.

This inconvenient reality poses significant challenges for investors, insurers, bankers and others needing to make informed judgments about potential business risks. That a target of an acquisition or divestiture, or applicant for Series A or B funding or a bank loan or any other investment opportunity happens to have some nexus to PFAS should not be a dealbreaker. Indeed, no inference should be drawn from the term 'PFAS' in the absence of more information.

Below are a few suggestions to assist investors in making informed decisions.

Ensure a chemist is part of the team. Given the complexity of chemical speciation issues, especially with regard to PFAS, it is critical that a chemist be part of the team. An experienced chemist will be able to analyse the chemical identity of a PFAS and assess its structure, toxicological profile and other information to determine if the PFAS is likely to pose liability issues.

Insist upon detailed information regarding chemical feedstocks. Detailed chemical-specific information is essential. A checklist approach – are PFAS part of the raw materials? and similarly broad questions – is devoid of meaning in any scientific sense and supports a narrative that 'cancels' a class of chemicals for unsupportable reasons.

Be prepared to engage in expanded due diligence. Because the universe of PFAS is so large (and even larger in the EU because the Organisation for Economic Co-operation and Development (OECD) defines PFAS more generously than does the US government) and because PFAS is an 'emerging contaminant', it is reasonable to assume that there may not be much information on a particular PFAS. Your team may need to conduct additional research to explore the potential toxicity and environmental fate tendencies of the

substance. This is not new data development. Analysis by scientifically competent professionals can include desk work involving structurally similar substances or suitable analogs. Their research will consist of reasonable and necessary exercises to assess the potential of the PFAS to impart essential properties without posing unreasonable risks.

Understand fully the uses and applications of the PFAS. It is critically important to understand how a PFAS is used and its end-of-life options. There is a big difference between a small amount of a PFAS encased in an article with little opportunity for exposure in industrial settings, versus consumer applications inviting broader direct human exposure and environmental releases. EPA is requiring much more lifecycle information as a condition of commercialising a new PFAS and has done so since the early 2000s, but less information is available for older chemistries, a fact that confounds due diligence involving historic PFAS contamination situations.

When it comes to PFAS, it will take a strong commitment to science and fact-finding to harness their unique and essential attributes for applications that add societal value while also blunting the proliferation of substances that pose unreasonable risk. Investors need to make this commitment. Reflexive and indiscriminate rejection of 'PFAS' is scientifically indefensible and financially reckless. ■