



Material Matters

A closer look at the ESG topics shaping the future of sustainable coatings for metal packaging

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Introduction

Sustainability is a topic that is now firmly embedded in the strategy and business reporting for any business organization. What was once a voluntary activity, is increasingly becoming mandatory.



Reporting requirements force companies to have a good understanding about their material topics. Furthermore, they push them to record their impact on the world around them, both in their own operations and across their value chain, with a view to better understanding, measuring and managing their overall impact on the world around us.

In 2025, the first wave of companies will be obliged to report their 2024 sustainability information according to the guidelines of the European Union's Corporate Sustainability Reporting Directive (CSRD). As AkzoNobel is in this first tranche (comprising large European listed companies), we are publishing this white paper for our colleagues in the metal packaging coating value chain to share our learnings.

In this paper we explore three out of eight of AkzoNobel's material Environmental, Social and Governance (ESG) topics, that we expect to be of interest to our customers and suppliers:



1. Substances of Very High Concern and Substances of Concern



2. Circularity



3. Climate change mitigation

We will discuss the key legislation related to these topics, the challenges they represent, and how we are overcoming them. However, in our 2024 Annual Report, other related topics have also been disclosed ([Click here to view Annual Report](#)).

This paper is written from the perspective of a supplier of metal packaging coatings and not intended as legal advice, or as a replacement of one's Double Materiality Assessment.



PART 1.

EU Corporate Sustainability Reporting Directive and Compliance with reporting standards

To address the challenges posed by climate change and environmental degradation, in 2019 the European Commission (EC) launched the European Green Deal – a series of initiatives and proposals to achieve, among other things, net zero emissions of greenhouse gases by 2050 and a sustained reduction in waste and pollution.

The first step towards its ‘zero pollution’ drive is the European Chemicals Strategy for Sustainability (CSS) which aims to protect people and the environment from harmful chemicals and boost innovation by promoting the use of safer and more sustainable chemicals. Reinforcing the promotion of safer chemicals is the prioritized restrictions of chemicals with Carcinogenic, Mutagenic or toxic for Reproduction (CMR) and Endocrine-Disrupting (ED) properties.

Also included in the Green Deal is a raft of new reporting requirements which organizations must adhere to – both

now and in the future. The key reporting requirements are outlined in the Corporate Sustainability Reporting Directive (CSRD).

To comply with the CSRD, companies will be required to use the European Sustainability Reporting Standards (ESRS) to prepare their ESG disclosures. The ESRS have taken existing ESG reporting platforms such as Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and others into account as part of their development.

CSRD Timelines and phase-in

In February 2025, the European Commission announced a package to recalibrate a set of EU rules, particularly those relating to sustainability reporting and due diligence. The driver of the Omnibus Simplification Package is the EU’s goal to increase the competitiveness of EU companies and enhance the EU’s economic growth by reducing the administrative burdens arising from legislation focusing on sustainability rules, while at the same time keeping the green ambitions in place.

The package includes amendments to the Corporate Sustainability Reporting Directive (CSRD). The proposal postpones the application of all reporting requirements in the CSRD for companies that are due to report in 2026 and 2027, and all companies with up to 1,000 employees and €50 million turnover to be outside the scope of the CSRD.

This proposal is yet to be sent to the European Parliament and the Council for discussion and adoption, so timing and final outcomes are difficult to predict at this time. However, the postponement for large companies and listed SMEs (second and third category) has already been approved in a separate Directive early April. With this so-called “stop the clock” proposal, large companies and SMEs are given two additional years to start reporting in compliance with CSRD (i.e. January ‘27 and ‘28).

January 2024



Large public interest companies

- All large listed companies (on EU-regulated markets) previously in scope of NFRD
- >500 employees

January 2027



Large companies

- All large companies that meet 2 out of 3 requirements
- >250 employees
- >€50m revenue
- >€25m assets

January 2028



Listed SMEs

- Small listed companies and medium-sized companies
- Different revenue / asset and employee threshold apply
- Includes 2-year opt-out

January 2028



Subsidiaries (non-EU parents)

- Non-EU companies with subsidiaries in the EU
- Turnover threshold >€150m
- EU branch office with turnover threshold of €40m

Reporting is always a year after application. For example. If a company is in scope per January 2024, their first mandatory disclosure is in 2025, over the year 2024.

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The CSRD introduces an innovative, critical element: the Double Materiality Assessment (DMA), a mandatory exercise for companies to identify the most material sustainability issues to the organization and its stakeholders. This evaluation considers both the inside-out perspective (how the company's activities impact environmental and social factors) and the outside-in perspective (how these factors financially affect the company).

Furthermore, the CSRD requires companies to obtain limited assurance from an independent third-party auditor regarding the accuracy of their reported sustainability information. This assurance ensures that the disclosures

meet the required standards. Statutory auditors, or audit firms with specialized expertise in sustainability, will be responsible for the assurance of sustainability reporting.

In conclusion, what was once voluntary (i.e. sustainability reporting) is now becoming mandatory. Companies will need to provide detailed and granular information, far beyond what was required under previous regulations, such as the Non-Financial Reporting Directive.

In the next chapter of this paper we will dive deeper into three topics that can be, and are, material to AkzoNobel: Substances of Very High Concern; Climate change mitigation; and Circularity.

1.1 Substances of Very High Concern and Substances of Concern

The European Sustainability Reporting Standards distinguish between Substances of Concern (SoC) and Substances of Very High Concern (SVHC). SVHC is a more specific category that includes substances identified as having particularly serious effects on human health or the environment. These substances are subject to authorization under the REACH regulation.

SoC is much broader in scope than SVHC and also includes multiple hazard classes. In this paper we will focus on SVHC.

If a SVHC listed by the European Chemicals Agency (ECHA) is material to a company, the company should, among other actions, report the purchased SVHCs and their volumes, as well as any pollution of SVHCs resulting from its operations.

Bisphenol A (BPA) is one substance on the ECHA's SVHC list, and regulations on this substance for Food Contact Materials are in place. In terms of Food Contact materials, the EU Ban on bisphenols is an outright ban on BPA, and proposes that other bisphenols of concern (including derivatives) may also be included in the ban if formally classified as having ED properties or being classified as CMR.

The BPA ban in the EU takes effect from July 2026 for beverage can internals, allowing single-use food contact articles that do not comply with the regulation to be put on the market until 20 July 2027. A further transitional period until January 20, 2028, is provided for can externals, and for packaging used for certain specific exempted foods, such as seasonally harvested fruits, vegetables and fish products. It is encouraging that different transitional periods have been agreed reflecting the complexity of the substitution process and the industry. Clarity on the timelines and scope are of the utmost importance, because given the scale of the task, clear deadlines allow the industry to mitigate the risks of disruption that may come from the substitution.



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Companies active in other regions are also navigating change:



US

The States of Washington and Vermont have already banned BPA in metal packaging. In the State of California products require a label if they contain any of the materials in the Californian Proposition 65 list. Furthermore, the State of California considers banning BPA and other bisphenols with "Bill CA AB 1148". This is driving the transition to Bisphenol A non-intent (BPAni) coatings.



Brazil

Brazil's ministry of health, ANVISA, has started the legislative process for BPA and may be considering the broader bisphenol legislation, which is either in place, or in process of being implemented in other parts of the world. Simultaneously, they are exploring changes to product labelling requirements for articles that contain BPA.



China

New legislation is being proposed. The BPA restriction will not be issued as a standalone regulation but will be included in the revised version of GB 4806.10 Food Contact Coatings. Currently, no specific timeline has been communicated. At present, the only substance that will have its Specific Migration Limit (SML) adjusted is BPA, from 0.6 mg/kg to 0.05 mg/kg. This legislation is the first step, reducing the amount of BPA in beverage coatings.

It is up to the appropriate regulatory bodies to evaluate the health impact of bisphenols. Technology has advanced to the point that bisphenols are not required for safe metal food and beverage packaging. Following on the regulatory actions of multiple jurisdictions, coating suppliers, including AkzoNobel, launched Bisphenol A non-intent (BPAni) coating ranges, which are currently in the market and being trialled in increasingly challenging applications.

It is critical that any transition with such significant impact should be structured and industry-led to ensure minimal disruption to the food supply and maintain performance. The complexity and risk of the more challenging applications including aggressive fills, hard to hold (HTH) and seasonally harvested/sourced foods has been recognized by the European Commission with longer transition periods of 36 months.

Finally, when replacing conventional technologies, preventing regrettable substitutions is crucial to avoiding unnecessary risks and costs. To ensure the BPA substitutions do not have to be replaced when other bisphenols receive a harmonized classification, AkzoNobel launched a range of food contact coatings that are free of bisphenols with further future proofing activities in process.

Interestingly, some of the material topics can be interrelated, for example SVHC and climate change mitigation. In developing new products that are BPAni to address the concern surrounding BPA, companies can choose to substitute away from epoxy-based products to acrylic-based products. As well as being more future proofed, the carbon footprint of acrylic-based products is considerably lower than epoxy-based products. For example, using AkzoNobel's Accelshield™ 300 beverage inside spray, which is free of all bisphenols (BPX non-intent or BPXni), instead of a conventional epoxy coating, can result in a carbon footprint reduction of 27% (based on cradle to grave (A1-4 + VOC + C3 + C4) calculations conforming to ISO 14021). This will support canmakers on their sustainability journey and in their ESG reporting.



1.2 Circularity

Companies are required to establish and describe a process to identify and assess material resource use and circular economy-related impacts, risks and opportunities. They are also obliged to include information on how the company is designing products for circularity, implementing circular supply chains, reducing waste, and promoting the circular economy, where material.

Circularity refers to the concept of designing and operating systems that are regenerative and restorative by nature, aiming to minimize waste and maximize the use of resources. The aim of circularity reporting is to encourage companies to take a systemic approach to sustainability and adopt more sustainable practices that contribute to a more sustainable future.

AkzoNobel discloses circularity around three themes:

1. Waste in its own operations
2. Durability of its portfolio
3. Percentage of post-consumer recycled plastic in plastic packs (which is not relevant for metal packaging coatings)

AkzoNobel also refers to circular solutions as a lever under Scope 3 with biobased raw materials. One example of legislation related to circularity is the EU Packaging and Packaging Waste Regulation (PPWR), whose goal is to ensure that by 2030, all packaging is reusable or recyclable in an economically viable way.

As with the example of SVHC and climate change mitigation, the topic of circularity can also be interrelated with other material topics. Substances of Very High Concern (SVHC) can hamper the safe recycling of waste streams. Therefore, the PPWR requires manufacturers to limit substances of concern and to design packaging materials, including recycled ones, to “not have any adverse effect on human health or the environment throughout their lifecycle.”

A concrete example is PFAS, although some PFAS are on the REACH Candidate List of SVHC, for example PFOA, perfluorinated carboxylic acids (C9-14 PFCAs) and PFHxS. The Packaging and Packaging Waste Regulation includes limits on per- and polyfluorinated alkyl substances (PFAS), to protect human health and the environment.

PFAS have been under scrutiny for quite some time as ‘forever chemicals’ because of their persistence in the environment. AkzoNobel has a full range of PFASni products available for its beverage can customers.

In 2023 the EU Parliament adopted a compromise amendment that if a substance (e.g. BPA) is banned in food contact materials in other legislation (e.g. the European Commission’s BPA Regulation), then there is no need for further action to address it under the PPWR. It similarly says that if a substance (e.g. other bisphenols) in Food Contact Materials (FCMs) is not specifically banned in other legislation, there is an opportunity to address them in a forthcoming reassessment of the legislation planned for 2025-2026. This could impose further requirements on the metal packaging sector, both in relation to the materials that companies use, as well as on the sustainability information that they must disclose.



1.3 Climate change mitigation

Climate action is usually split into two strategies:

Mitigation

Actively avoiding or reducing emissions to prevent further climate change.

Adaptation

Making efforts to reduce the risks and impacts of the effects of climate change, e.g. taking action to protect people, economies and nature.

AkzoNobel will be reporting on both climate change mitigation, as well as adaptation. For climate change mitigation a company should monitor, measure and report carbon emissions and other environmental measures within their own organization (Scope 1 and 2), and, where material, the supply chain (Scope 3 emissions). This also needs to be verified by an external party for the limited assurance.

Climate change mitigation is an integral part of achieving a more sustainable business. In 2021, AkzoNobel announced an ambition of reducing carbon emissions across its full value chain by 50% (absolute) by 2030, taking 2018 as its baseline. These ambitions are aligned with the Paris Agreement, which aims to limit climate change and ensure the global temperature does not rise more than 1.5°C above pre-industrial levels. By signing up to the Science Based Targets initiative (SBTi), AkzoNobel's targets for Scope 1, 2 and 3 were validated in line with the latest climate science and in accordance with the SBTi's strict assessment criteria. This commitment covers AkzoNobel's own operations (Scope 1 and 2), as well as Scope 3 upstream and downstream. Scope 3 covers purchased goods and services, application, Volatile Organic Compounds (VOC) and use of AkzoNobel's products, and end-of-life. Together, this covers more than 95% of AkzoNobel's total emissions along the value chain.

The adoption of the SBTi is expected to help drive innovation and collaboration with its value chain partners, including customers and suppliers, some of whom are already setting their own SBTi targets.

So why would companies go beyond reporting the carbon footprint of their own operations (Scope 1, and 2), and extend the reporting to the entire value chain (Scope 3)?

Scope 3 emissions can represent the most significant source of greenhouse gas emissions in a company's value chain. Scope 3 emissions are indirect emissions that occur both upstream and downstream of a company's operations, including emissions from suppliers, customers, and end-users. Reporting on Scope 3 emissions can help companies to identify opportunities for reducing their carbon footprint and for improving supply chain efficiency. Reducing carbon emissions across the entire value chain is therefore critical, and the sustainability of a company's own products and services can have a direct impact on their suppliers' and customers' sustainability targets. Such interdependency makes future collaboration essential: AkzoNobel's Scope 1 and 2 emissions are its supplier's Scope 3, and progress can demand radical innovations in products, services and business models.

Whilst AkzoNobel looks closely at sustainability in developing its new coating technologies and in sourcing raw materials, it is known that a significant volume of emissions is generated through its customers' application and curing processes. By providing detailed information about the carbon footprint of its products, and advising on application and curing methods, AkzoNobel can support those customers and the wider industry in better understanding and reducing emissions across the entire value chain, and in further simplifying the reporting process.

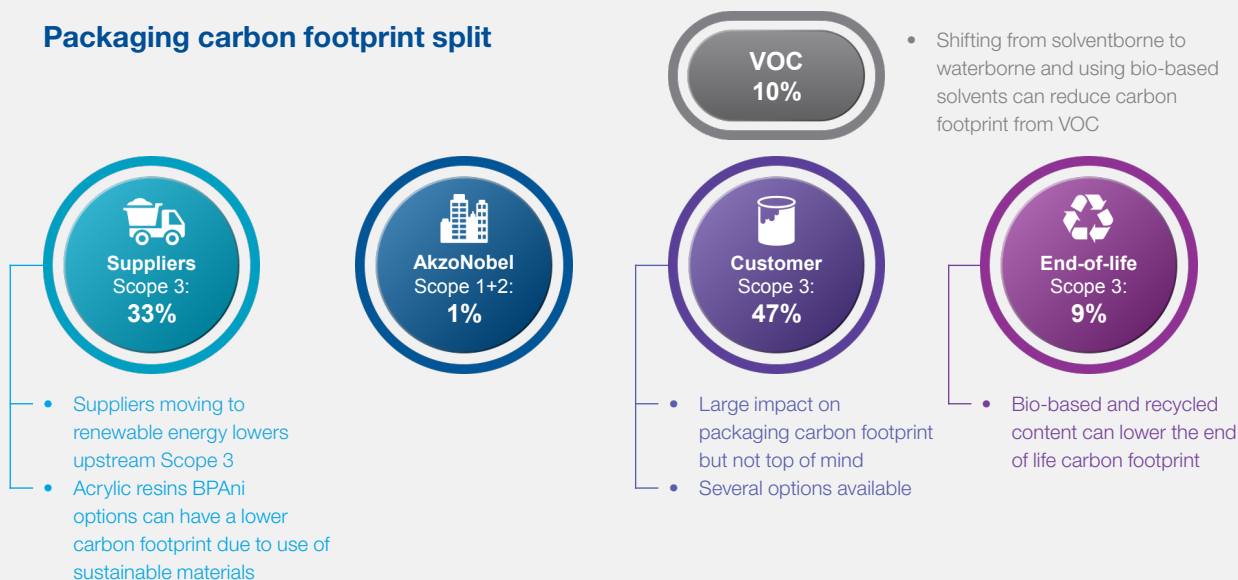


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Interestingly, in developing new products that are BPAni, businesses can benefit not only from a coating that addresses the regulatory and human health concerns but also have an inherently lower carbon footprint, further contributing to the sustainability debate. Shifting from current BPA-dominated materials to BPAni often has a lower carbon footprint than epoxy-based products.

Packaging carbon footprint split



For climate change adaptation a company needs to report the risk of climate change to its operations and devise strategies to deal with effects of climate change. One approach that companies can take is to analyze potential natural hazards resulting from climate change that could lead to asset loss and operational disruptions.

For instance, AkzoNobel took a comprehensive approach, using total insured value for its own locations and total spend value for supplier locations to assess criticality. They also employed Shared Socio-economic pathways to help model future changes, using widely accepted models like the sixth report from IPCC. Through this process, AkzoNobel was able to identify if locations were at risk of natural hazards, such as wind, flood, drought, and more. The company analyzed both the risk of property damage and business disruption, which allowed them to develop effective strategies to address the impacts of climate change on their operations.

While not all businesses are required to do CSRD reporting or to have a climate action strategy devised, they can learn from other businesses who are already developing strategies to reduce climate impact, future-proof their operations and strengthen their position in an increasingly sustainability-focus world. Key lessons for climate mitigation include monitoring, measuring and reporting carbon emissions within their own organization (Scope 1 and 2), and, where material, the supply chain (Scope 3 emissions), and using external validation for credibility. This can be coupled with climate change adaptation and strategies to deal with effects of climate change.





AkzoNobel Packaging Coatings' vision for sustainable innovation

AkzoNobel has been investing for some time in innovative solutions that enable us to remove materials of concern from our coatings and the manufacturing process. Our teams continue to innovate with the aim of creating high-performing alternative technologies that provide the same food protection performance, reliability, and manufacturing efficiency of legacy solutions but with fewer of the environmental and safety downsides.

To that end we launched Accelshield™ 700, a beverage can ends internal coating. This was our first internal coating that is BPA_{ni}. Crucially, Accelshield™ 700 has been designed for use with most beverages, including hard to hold drinks with high acidity or those that require high temperature sterilization processes such as yoghurt drinks, milk, and coffee. This is the first time we have innovated a coating specifically for can ends and we created a much needed, viable alternative for the widest number of uses, to support customers transitioning to a bisphenol-free world.

In 2024, we launched Accelshield™ 300 beverage inside spray that is free of all bisphenols (BPX non-intent), phenolics and styrene, delivering superior levels of corrosion protection while providing manufacturers a long-term, reliable solution to address current and future regulation with respect to materials of concern. Accelshield™ 300 goes well beyond established technologies in the industry and features a completely novel acrylic resin network. This innovative combination delivers advanced corrosion protection, flexibility, and sensory performance. This new inside spray can also reduce carbon footprint by around 30% compared with current epoxy alternatives, highlighting the

fact that bisphenol-free metal packaging can also meet consumer expectations for more sustainable packaging.

We have also launched Accelstyle™ 100 waterborne gloss overprint varnish (OPV), and Accelstyle™ 200 waterborne matt OPV. Both are not only free from bisphenols, but also free of styrene and PFAS which – as we have seen from the section on current/future regulation – are also under the spotlight.

Securshield™ 500 Series is another example of how we are working with manufacturers to meet the challenges they face today, and in the future. It is a PVC-free and bisphenol-free (BPX_{ni}) internal coating for easy open food can ends that also provides a step-up improvement in sustainability and performance compared to current organosol-based products on the market. It integrates seamlessly into existing manufacturing processes for a wider range of packs and is suitable for a wide variety of metal food packs which means coil coaters can use a single technology to meet the varying needs of many food can manufacturers.

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These next generation coatings have been designed to integrate into existing production processes to minimize disruption to production lines, making substitution as seamless as possible. This is critical: business continuity and efficiency are paramount. Substituting new materials for old will, inevitably, result in some disruption.

However, if a manufacturer is obliged to substitute, then it is important that it only has to switch once and not be bounced into a decision now to satisfy a short-term need that could have long-term consequences.

The speed of integrating alternative coating technologies into the commercial mainstream will be slow and change will take time as the adoption of new coatings requires significant testing, qualification, and approvals. We are working closely with customers and continue to prove that it is possible to move away from BPA and bisphenol coatings today, without having to adopt interim substitutes that they may subsequently have cause to regret.

Beyond coatings

It is not only through the development of new products, however, that we can seek to make a difference. We have created a dedicated Sustainable Innovation team with a mandate to support our canmaking customers in making a material difference in reducing their carbon emissions and achieving their own sustainability targets. This means not just delivering new products but also taking a collaborative approach to a customer's processes and business models to drive even greater efficiencies and environmental performance.

The impact of future legislative change has not been a barrier to progress; the industry continues to evolve to address real-world demands. We know that securing supply will be paramount for canmakers, and we are seeing several European can manufacturers starting to make their plans to phase out epoxy coatings.

To support this, we have invested €32 million in a new plant at our Villafranca site in Spain to produce BPAⁿⁱ coatings for the metal packaging industry. This plant will be operational in 2025 to support customers in EMEA. Sustainability

is a priority, so the new facility has been designed to high eco-efficiency standards while reducing energy consumption. This is again important when considering our Scope 1 and 2, and our customers' Scope 3 emission needs. The investment is in line with our view as already stated that bisphenols of any kind are no longer required to create safe coatings.

With a collaborative approach across the industry every challenge can present opportunities for positive change. Cans are widely accepted as the most sustainable packaging option with aluminum being infinitely recyclable, but that is not stopping canmakers from looking for new ways of further reducing their environmental impact.

Many are exploring expanding the grades of the aluminum used in the recycled content of can-bodies and the full use of recycled – rather than virgin – aluminum in a new can end profiles. All of this will require the right coatings to ensure the safe protection of the packaging and the beverage contents.



Summary

The combination of new ESG reporting requirements and key regulatory changes for the metal packing sector are already having an impact. But these changes can also create opportunities, which AkzoNobel and businesses across the value chain are embracing. The industry is seeking and making great strides towards reducing its impact on the environment, securing the future of metal food and beverage packaging.

For more information please visit www.packagingcoatings.akzonobel.com