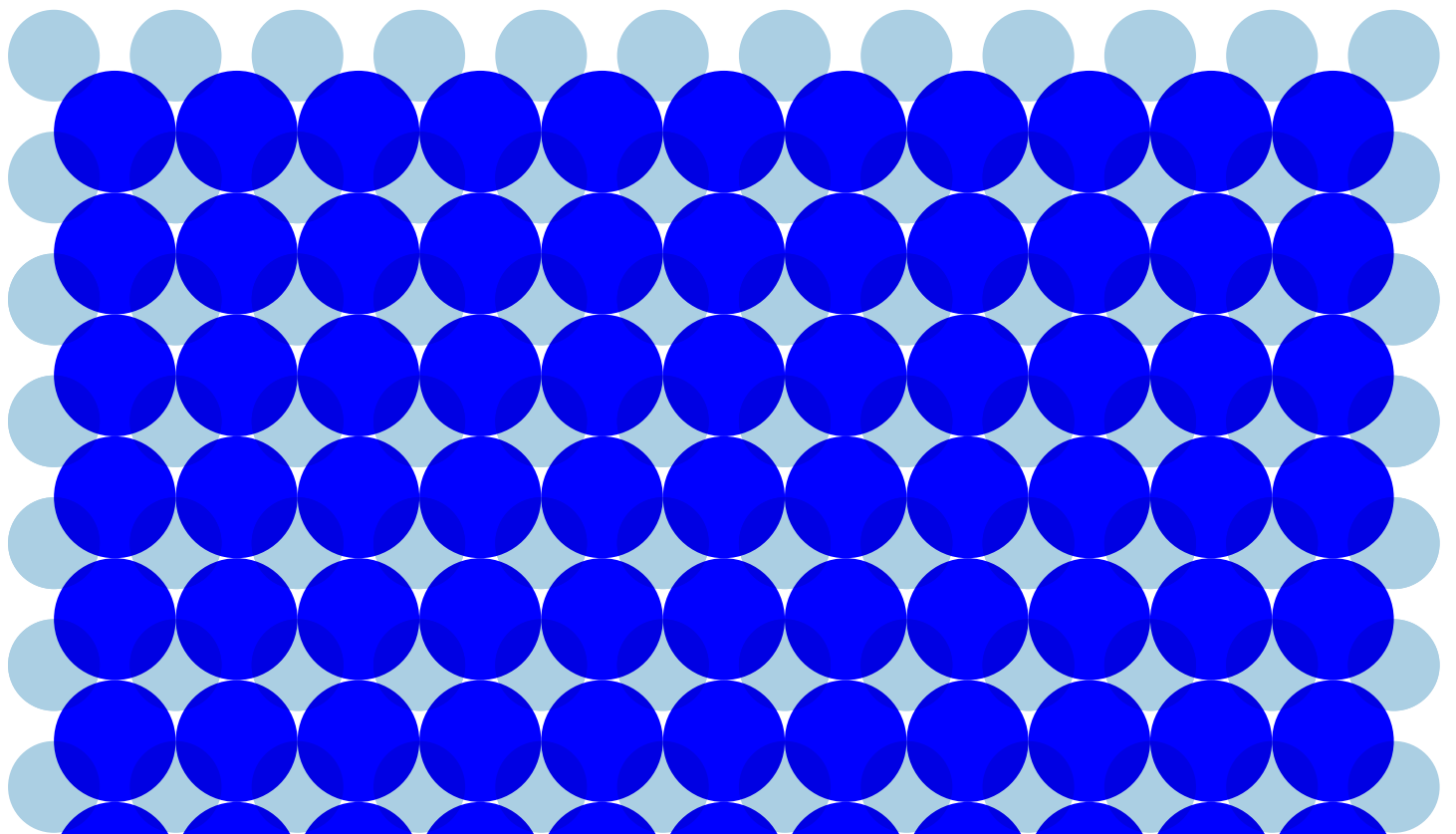


# From the Importance of Backward Integration for Supply Chain Derisking, to the Relevance of Working with a Backward Integrated CDMO

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When launching a product, each company must rely on strong supply chain strategies to ensure that the said product will be available to the market. Depending on launch approaches, different tactics can be used, but all will have a common focus: How can I derisk? How can I make sure my product will be made available to my customers? Zooming into the chemical industry, backward integration happened to be a powerful opportunity for such derisking.

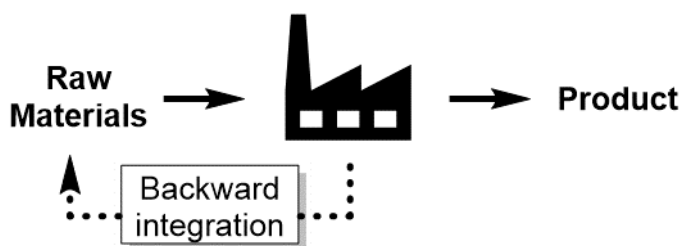


## From the Importance of Backward Integration for Supply Chain Derisking, to the Relevance of Working with a Backward Integrated CDMO

Derisking supplies have always been a key priority for procurement and supply chain managers in all industries. Over the last few years, supply chain strategists even faced an all-new set of threats (with for example Covid-19 and the Suez Canal blocking). As backward integration is offering a clear advantage in that direction, these challenging times did highlight the relevance of working with a backward-integrated partner, which Arxada is proud to be for its customers.

Avoiding supply disruption is a common but always challenging topic in all industries. Aside from concepts such as dual-sourcing which is relying on multiple sites and/or manufacturers, a given producer would significantly derisk its production via backward integration, which can be seen as a move backward in the supply chain, for an “earlier” control of the raw materials (Figure 1).

Figure 1. Backward integration as a backward move in the supply chain.



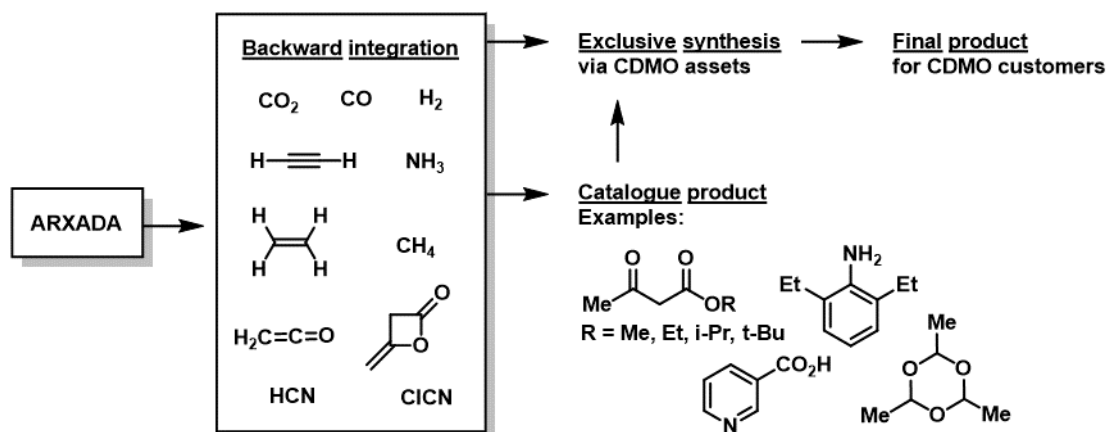
In simple words, if a producer is using the intermediate (B) to make a product (C), and if this intermediate (B) is bought from a supplier preparing it from a raw material (A), the backward integrated producer would be able to produce (C) directly from the earliest raw material (A). With this, the producer no longer depends on the supply of the intermediate (B), which is by essence more complex and rare than its own source (A).

When moving backward in the supply chain, it means that less complex raw materials are needed, which most of the time translates into more sourcing opportunities. When applied to the chemical industry, it means that instead of purchasing an already processed chemical intermediate, the producer can now start with bulk raw materials, which most of the time have several sources available around the globe. With an appropriate spread of sources for the bulk raw materials, the risks linked to geopolitical context or financial dependency for example, are significantly mitigated.

The chemical industry is extremely diverse by nature, which means that even if chemicals are based on as little as 118 chemical elements (as of today), their combinations would result in an infinite number of possibilities. This being said, no industry whatsoever could be backward integrated for virtually “all” chemicals and one will have to focus on the ones relevant to her/his sourcing needs.

The Arxada Visp site is backward integrated and is producing and making use of several key starting materials / reagents, such as acetylene, hydrogen cyanide, ketene, or diketene (Figure 2).

Figure 2. Snapshot of the Visp chemical network and its uses.



All of these key starting materials / reagents are then further used and transformed on-site, leading to more complex building blocks / products, that are available on the Arxada website (catalogue products). As Arxada is also offering CDMO services, all of these raw materials for which the company is backward integrated, and catalogue products, can then be further used / processed on-site for exclusive synthesis requests. Whilst there are a limited number of chemicals in the backward integration box of Figure 2 and even fewer catalogue products shown, one skilled in the art would rapidly understand that the actual number of possibilities is close to limitless.

With such a backward integration opportunity, the final product can be based on raw materials that are produced directly on-site, leading to greater flexibility and less constraint for the sourcing exercise. With less risk not to find nor to be dependable on alternative sources for the early-stage ingredients / reactants or reagents, both the manufacturer and the company looking for the ingredient, will strengthen the collaboration, and unlock further benefits for the end-user.

**In conclusion, with the focus on derisking supply chains in the chemical industry, collaboration with a backward integrated partner, specially CDMO, appears to be a powerful strategy. Thanks to its backward integration, Arxada positions itself as a key CDMO partner – indeed the only one in Europe offering access to a ketene / diketene stream, to strengthen the supply chain of its key customers.**

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## Our offer

- **On-site key raw materials production**
- **Only ketene/diketene manufacturer in Europe**
- **Ability to derivatize on-demand**
- **Focus on what matters to you**

To discuss how Arxada could support and derisk your supply chain, get in touch with: [myproject@arxada.com](mailto:myproject@arxada.com)



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