

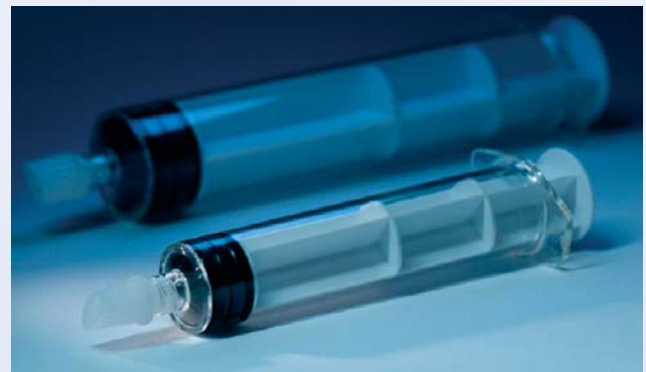


Pre-Filled Syringes

Convenient - Safe - Efficient:

Fresenius Kabi adds pre-filled syringes to its container portfolio

Pre-filled syringes (PFS) have a lot of advantages over conventional containers for drugs for injection and enjoy excellent market acceptance. Sales of PFS have been growing at rates in the double digits for the last few years, partly driven by the introduction of increasing numbers of biotech drugs. This is leading to a growth in importance of the parenteral route of drug application. Pre-filled syringes cut out the transfer of the drug from the ampoule or vial to the syringe - this saves some work for the person applying the drug, and it also saves (waste) material. A bigger saving results when the drug itself is expensive (e.g. proteins): Conventional containers have to be overfilled to allow for losses in the transfer to the syringe, whereas PFS deliver the correct dose reliably with significantly less overfill. Taken together, these savings can more than offset the higher production costs of PFS compared to other



Safety is also an issue, both for the healthcare professionals and the patients. Handling of needles, syringes and ampoules is well known as a source of the small accidents that expose healthcare workers to drugs and/or infection. Healthcare employers worldwide are under pressure to reduce these risks to their staff, and PFS are an obvious improvement. For the patients, PFS also reduce the risks of contamination of the drug and cross-infection. Also, because the final container used to administer the drug to the patient is clearly labeled, PFS eliminate risks of misidentification and mix-ups, which are particularly dangerous when highly potent drugs are in play. Because of this ease and safety of use, PFS can be made in versions suitable for self-administration, making them an ideal response to the growing demand for home-use products.

PFS are available in small formats containing drugs for injection and also in larger sizes that can be used to deliver infusion solutions via pump systems. Syringes with volumes larger than 20ml have become available in the last years thanks to new plastic materials like COP and COC. These new materials combine the visual appearance and transparency of glass with the advantages of plastic.

To be at the forefront of these developments, Fresenius Kabi is cooperating with established partners to set up a syringe filling line at its plant in Graz, Austria. The facility is being laid out to aseptically process plastic and glass syringes from 0.1 to 50ml using state-of-the-art isolator technology.

Development and commercial manufacturing of solutions and emulsions are available for third parties and we will be glad to discuss any project with potential partners.

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