



Application Note



Inks and supplies

## Coding solutions for returnable beverage containers

# Overcoming condensation and achieving code removability in returnable beverage container applications

### Challenges of reusable bottles and kegs

Reusable bottles and kegs need to supply the beverage, show an accurate expiration date, and then be able to be filled again with fresh product with an updated expiration date to match. There are some significant challenges that beverage manufacturers need to overcome to meet these requirements. During both the day-to-day production and when in the market for sale, the expiration date needs to be resistant to condensation and cold or hot temperatures. Additionally, this code needs to be easily removed and washed off the container so that a new expiration date can be printed.

Videojet offers several continuous inkjet (CIJ) printing inks which have been specifically formulated to overcome these challenges. Our inks have been mindfully crafted to meet the needs of many different returnable container materials including glass, plastic, and metal.

### Condensation

To address moisture concerns, Videojet has developed inks which dry rapidly and do not smear when interacting with condensation. When coding for a cold fill operation, there may also be an air knife used to blow away large drops of water from the beverage container right before printing. The very thin layer of condensation which is left over will not cause the ink to smear, and the codes will remain clear and crisp. Videojet has formulated inks to have a stronger, more durable bond when this thin layer of condensation forms back over the dried code. The ink gains a greater resistance to rubbing off, even when the container is cold and in a bucket of ice.

### Code removability

These specific Videojet inks have been designed to be removed during a standard washing process for returned bottles. This is typically done with a 2 - 4% caustic level at above 60C/140F. This removes the need to add a second wash for removing the code. The ink will be completely removed, and the bottle will not be damaged. Once filled again, the bottles will only have the correct expiration date.

## Balance

There needs to be a balance between adhesion of the ink and its ability to be removed. The ink needs to resist being rubbed off when handled and not run off when the container is cold and wet. Additionally, the ink needs to be removable without causing any damage to the container. Videojet offers mindfully formulated inks which perform ideally in cold environments where condensation is present and can be easily removed when the container is returned.

## Choosing the right Videojet ink solution

Since there is a range of returnable bottling materials, the Videojet ink chemistry development team has spent extensive time to identify the best formulations for multiple returnable beverage applications. These inks are designed to be printed in cold and hot fill operations, where condensation forms onto the surface of the container. Then, once the container is returned, the inks can be removed during a standard cleaning process. Below is a table highlighting Videojet inks available to meet returnable bottle and other beverage container needs.

Returnable Beverage Inks		
Glass and plastic (Bottles)	Metal (Beer kegs)	Plastic (Water jugs)
		
V4220 (Black) V4287 (Non-MEK yellow) V4283 (Yellow)	V4221 (Black) V4287 (Non-MEK yellow) V4283 (Yellow)	V4251 (Black)



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