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What workplace safety hazards were found?

Flexo inks and press-side additions may present safety hazards to workers and the community. To compare the relative safety of ink systems, the inks in the study were rated for flammability, ignitability, and reactivity.

Findings on workplace safety hazards

As is true for almost every industry, flexo inks may contain chemicals that present safety hazards in the workplace. Table 11 lists the workplace safety hazards of the inks in the study.

- Because **solvent-based inks** generally have higher amounts of solvents, they posed workplace hazards for both flammability and ignitability. They had an average flammability rank of 3, which means they can easily be ignited under almost all normal temperature conditions. They also were rated as ignitable (can be ignited under 140°F). None were reactive.
- The **water-based inks**, which contained varying percentages of flammable solvents, were less flammable on average than solvent-based inks. However, the range was wider, and some water-based ink formulations were as flammable as solvent-based formulations. No water-based inks were ignitable or reactive.
- Reactivity and flammability data were only available for one of the **UV-cured inks**, which was rated as slightly flammable and slightly reactive. None of the UV-cured inks were ignitable.

How to use these findings

The safety of inks in the study varied by ink system, and water-based inks showed an especially wide range of flammability rankings. It is therefore not appropriate to assume that an ink necessarily shares the common characteristics associated with

TABLE 11 Workplace Safety Hazards of the Flexo Inks

	Flammability (ranked 0-4)*	Ignitability (yes/no)	Reactivity (ranked 0-4)*
Range across solvent-based inks	3	yes	0
Range across water-based inks	0-3	no	0
Range across UV-cured inks	1	no	1

* A rank of 0 indicates a very safe product, whereas a rank of 4 indicates a highly unsafe product.

Water-based inks showed an especially wide range of flammability rankings.

other inks in the same system. It is important to check the safety rankings for all inks used and stored in the facility.

Also, following systematic procedures for safely preparing, operating, and cleaning press equipment will help to avoid serious injuries and health problems to employees. An effective process safety program identifies workplace hazards and seeks to eliminate or reduce their potential for harm. As part of any safety program, printers should

- follow all safety guidelines and rules,
- clearly post all relevant MSDSs,
- become aware of the safety hazards for all chemicals used and stored in the facility,
- have emergency evacuation and notification procedures in place, and
- consider whether ink products with lower safety ratings are available and suitable.