



TINKREDIBLE MGA Process Inks

Low Migration Metal Decoration Inks

TINKREDIBLE MGA is a low migration ink series and the latest generation of oven-curing metal decoration inks designed for printing of food packaging.

Range of Applications

The inks have been designed for printing from plates onto pre-coated or bright (uncoated) sheet metal. They feature a high surface hardness following thermal curing (150 – 175°C with a 10 minute pass) and are perfectly suitable for the application of a final coating, which can be applied wet-on-dry.

The range of potential print products extends from technical packaging through aerosol cans to sterilisation-temperature-resistant, deep-drawn forms of metal packaging.

Available products

- Process inks
- Special colours: Any shade you would like (e.g. brand colours) on the basis of TINKREDIBLE MGA

Properties

TINKREDIBLE MGA	Sales code	Fastness properties per ISO 12040 / ISO 2836					
		Light BWS	Heat resistance ^{*1}	Sterilisation ^{*2}	Alcohol	Solvent mixture	Alkali
Yellow	41 TMA 7000	6	+	+	+	+	+
Magenta	42 TMA 7000	6	+	+	+	+	+
Cyan	43TMA 7000	8	+	+	+	+	+
Black	49 TMA 7000	8	+	+	+	+	+
Yellow ISO 12647 -9	41 TMA 7002	6	+	+	+	+	+
Magenta ISO 12647-9	42 TMA 7002	6	+	+	+	+	+
Yellow	41 TMA 3000	5	-	+			
Magenta	42 TMA 3000	5	-	/			
Magenta	42 TMA 3004	5	+	-			

- Metal decoration inks for printing the non-food contact surface for food packaging
- Mineral oil free
- Good adhesion
- Very good printability in offset and letter press
- Coatable wet-on-dry
- Good scratch resistance
- Deep-drawable
- Short drying time at the usual drier temperatures (10 min. at 150 – 175°C)
- Very high level of heat resistance (max.10 min. at 210°C) *¹
- Sterilisation-resistant (1 h at 130°C) *²

Requirements for food packaging

Consumer protection demands that packed foodstuffs may not be contaminated by packaging components.

Consequently, no substances are allowed to transfer from substrates, printing ink and coating films to the packaged food in quantities that exceed the legal limits.

A possible transfer of substances from printed metal packaging materials to foodstuffs can occur by:

- Invisible setoff in the stack, that is, the transfer of invisible substances from the printed ink film to the unprinted reverse side above it (food contact side) and in the end from there to the packed foodstuff
- The transfer of volatile substances in the enclosed air space of packaging

Metal packaging for foodstuffs, confectionery and consumables (e.g. tobacco and tobacco products) complying with the current European and national legal requirements can be printed with TINKREDIBLE MGA metal decoration inks.

The legal basis are European Regulations (EC) No. 1935/2004, (EC) No. 2023/2006, (EU) No. 10/2011, the Swiss Ordinance on Food Contact Materials and Articles SR 817.023.21 and the German Food, Consumer Goods and Feed Code (LFGB). The LFGB governs the marketing of food and consumer goods and lays down the fundamental guidelines for the design of food packaging.

Information

Art 3 of Regulation (EC) No. 1935/2004 defines the General requirements for food packaging:

"Materials and articles [...] shall be manufactured in compliance with good manufacturing practice so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could:

- a) endanger human health or
- b) bring about an unacceptable change in the composition of the food
- c) bring about a deterioration in the organoleptic characteristics thereof"

Information on Good Manufacturing Practice (GMP)

TINKREDIBLE MGA products are formulated and manufactured in compliance with the *"EuPIA Guideline on Printing Inks applied to the Non-Food Contact Surface of Food Packaging Materials and Articles"* and *"Good Manufacturing Practices for the Production of Packaging Inks formulated for use on the non-food-contact surfaces of food packaging and articles intended to come into contact with food"* published by the European Printing Ink Association (EuPIA).

TINKREDIBLE MGA printing inks are formulated using only components that do either not migrate or which have been evaluated for contact with foodstuffs, and formulated such that any traces of migrants from real life prints will be below the specific migration limits (SMLs). The content of trace amounts of non intentionally added substances (NIAS) in the inks coming from raw materials impurities, from the process or as adventitious contaminants is monitored by spot sample analyses at regular intervals and continuously minimised. This is a significant difference to standard tin-printing inks. TINKREDIBLE MGA inks have been formulated such that any migration even of evaluated constituents from the inks is reduced to a minimum.

Any use of non-approved raw materials in the formulation of the inks is excluded by a special SAP based system.

TINKREDIBLE MGA printing inks are produced in segregated production areas to prevent contamination with non MGA products/raw materials.

All inks will be checked by a specific analytical quality control system.

Full traceability in the production of the inks is guaranteed back to the raw material batch.

Information on substances used or known to be present with the potential to migrate, including possible restrictions, is provided in the "Statement of Composition", to allow members of the packaging chain to assess compliance of the printed packaging with the Framework Regulation (EC) No 1935/2004 and/or Swiss Ordinance SR 817.023.21.

Technical application

Fount solution delivery and composition

Delivery of the fount solution on the press must be kept to an absolute minimum – particularly when the level of ink application is low – in order to prevent excessive emulsification and poor coating quality associated with this.

The hubergroup has developed fount concentrates for use specifically with these products:

- **HYDROFIX-B 8013** (mit 8-10 vol% IPA)
- **MGA HYDROFIX 8014** (mit 8 – 10 vol% IPA)

Auxiliaries

Normally the inks can be processed as delivered. If an adaption of properties becomes necessary due to exceptional printing conditions, only approved additives must be used which are compatible with the specific TINKREDIBLE MGA binder system:

- **TINKREDIBLE MGA Print Oil 10TMA1405** (1-3% addition) to reduce the tack and consistency

Under no circumstances may conventional printing ink oils, paste reducers or the like be used.

TINKREDIBLE MGA inks may only be mixed with other TINKREDIBLE MGA inks.

Classification

MSDS is available upon request.