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Exploring the world – **SAFELY!**



The requirements ink manufacturers need to meet are quite complex and subject to constant changes, mainly because of new directives, regulations, acts and updated legislation.

Safety and environmental protection are key issues at Coates Screen Inks GmbH.

As far as technically possible, we substitute all possibly hazardous substances by adequate non-hazardous raw materials.

Increased safety requirements mainly must be met for food packaging, medical products, and toys. Especially for the latter there are stringent safety demands for the chemicals used in printing inks for toys. Babies and infants usually explore their playthings in any possible way.

Toys – are all products, which are used as playthings by babies and children up to the age of 14.

SAFETY OF TOYS EN 71:3-2019 + A1:2021

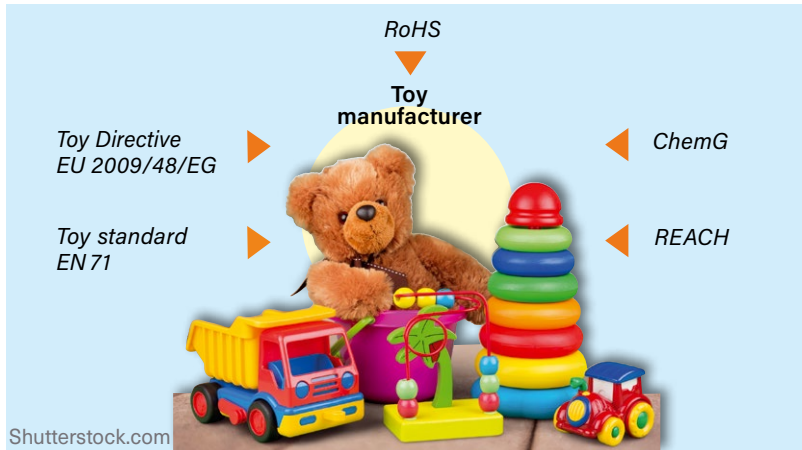
**(MIGRATION OF CERTAIN ELEMENTS – CATEGORY III:
SCRAPED OFF MATERIALS)**

In addition to national regulations, there are also European guidelines, directives, and standards regarding the safety of toys to ensure a high safety standard within the European market.

Legal requirements and regulations toy manufacturers must meet form a quite complex “puzzle”. To avoid any misunderstandings please see definitions below:

- **Law:** Fixed rules with legally binding regulations, everyone must comply.
- **EU-Regulation:** Binding order prescribed by authorities with legal force and effects comparable to laws. Supersedes national legislation.
- **EU-Directive:** Authoritative instruction or order, not directly binding. Implementation into national law is required before the directive becomes legally binding.
- **Standard:** Legal and general rules with technical recommendations to solve any issues. Usually experts work out these standards. Standards can be European (EU), International (ISO) or National (DIN in Germany).
- **Resolution:** Binding legal act with a general validity.

For further explanation a small extract of legal requirements for the safety of toys:



The Toy Directive 88/378/ECC became effective May 6th 1988 and had to be implemented into the national laws of the EC member states not later than June 30th 1989. All toys meeting these requirements could then be supplied with the EC sign.

In addition, that directive stipulated that the manufacturer or supplier is responsible for the safety of toys. When the Toys Directive 2009/48/EG became effective the former directive 88/378/ECC no longer applied. The Toy Directive 2009/48/EC was legally implemented in Germany together with the Second Regulation of the Equipment and Product Safety Act (GPSGV).

As of July 2013, any toy or plaything on the market must comply with the requirements for the safety of toys as lined out in the Toy Directive 2009/48/EC. Furthermore, all toys must show the CE-mark. Additional markings in connection with consumer protection are allowed. A well-known example would be the "GS" mark – tested for safety.

Further examples:

- LGA mark
- TÜV seal (Technical Supervisory Assosiation)
- Product Test Foundation

These additional labels are a voluntary manufacturer information. Chemical safety requirements and their compliances are lined out in Standard EN 71 (safety of toys). EN 71 consists of several parts. The most important parts are listed below:

- Mechanical and physical properties
- Flammability
- Migration of certain elements

For Coates Screen as ink manufacturer EN 71-3:2019 is the most important part as it determines the threshold limits for migration of certain chemical elements such as heavy metals like lead, cadmium, chromium, mercury etc. The list of hazardous substances was expanded to 19 substances. Threshold limits are much more stringent. The admissible threshold values depend on the type of toy. There are three categories:

- Category I: Dry, brittle, powder like or pliable materials
- Category II: Liquid or sticky materials
- Category III: Scraped-off materials

Coates Screen Inks GmbH always commissions tests with scraped-off materials as these represent the properties of a cured and dried ink film.

By combining the assumed daily intake with the bioavailability values, limits are obtained for various toxic elements in micrograms per gram of toy material (milligrams per kilogram)

The analysis can be carried out by accredited laboratories, however, the toy manufacturer is responsible for compliance with the legal requirements.

Based on the raw materials used and provided the inks are properly processed, Coates Screen Inks GmbH can offer the below listed screen and pad printing ink ranges, all in compliance with EN71-3:2019.

SCREEN PRINTING INKS:

CP ● HG ● PF ● PP ● TZ
 UV 650018 ● YN ● Z ● Z/GL
 ZGM ● ZE 1690 ● ZMN
 Z/PVC

PAD PRINTING INKS:

TP 218 ● TP 218/GL ● TP 247
 TP 253 ● TP 272 ● TP 273
 TP 273/T ● TP 282 ● TP 287
 TP 300 ● TP 300-111580
 TP 307 ● TP 313 ● TP 318
 TP 340 ● TP 400 ● TP E-HF
 TP/PP

Some gold and bronze colours do not comply with the requirements of EN71-3:2019 as the pigments used for these shades will exceed certain threshold limits of that standard. If required, we can offer complying alternatives.