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**COLORANTS
FOR THE COLORATION OF
CONSUMER GOODS,
FOOD PACKAGING AND TOYS**

Colorants for the coloration of consumer goods, food packaging and toys

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PREFACE AND OBJECTIVE

Consumer articles and food packaging are often colored, either to make them visually attractive or for identification purposes.

The selection of a suitable colorant especially for this kind of application depends on a wide range of criteria. Beside the technical application requirements, such as tinctorial strength or lightfastness an increasing number of additional parameters like purity specifications have to be fulfilled. These requirements are based on existing regulations related to the intended use and may vary from region to region or even from country to country.

The present brochure is intended to provide some transparency in this complex field of regulations and give guidance to find the right Clariant colorant for the intended use.

It starts by discussing essential regulatory requirements in general and then describes the specific requirements in important countries. Depending on the country in which the colorant is to be used, the brochure will indicate which regulations need to be fulfilled. If the colorant is to be used in a number of countries, the criteria will increase accordingly.

In the tabular section of the brochure, the individual product ranges that are generally suitable for use in contact with food are listed alphabetically. The table shows the basic pigment used, with details of Colour Index, CAS number and EINECS/ELINCS numbers. Due to the already mentioned complexity of existing regulations it is obvious not to evaluate all products as against all regulations. Accordingly, in the tabular section – dependent on the main application(s) of the particular colorant – the relevant regulation(s) are selected and evaluated. The table should provide guidance to users on which colorants of the Clariant range are generally suitable for the intended application.

In view of the fact that Clariant is unaware of the process and temperature to be used in a particular case and of possible incompatibilities with other production materials, users must always check the suitability of colorants under their own specific processing conditions.

From time to time, legislation can be amended or widened. In this respect, the brochure represents the situation as of June 2013 to the best of our knowledge and should not be construed as providing any guarantee. In addition, our products are sometimes revised and modified. This can mean slight improvements in their composition to take account of new raw materials or technological developments. It may also be necessary to alter the assessment relating to regulatory requirements in the light of new legal findings or judgements. In this respect, it should be understood that the Clariant colorant range for consumer articles used in contact with food is continually evolving, while a brochure can only present a snapshot of the situation at a given moment. You can find out the latest situation with regard to individual products from our sales organization.

For the use of colorants in cosmetics and toys, even stricter requirements than for consumer articles used in contact with food apply in some cases.

KEY FIGURES OF ENVIRONMENTAL PROTECTION, SAFETY AND HEALTH PROTECTION

Beside simply complying with existing regulations which is mandatory for all companies doing business Clariant participates in various voluntary sustainability programs – including the duties imposed by the Responsible Care® Global Charter and the Global Product Strategy. Clariant has set clear, qualitative sustainability goals, such as further increasing the system safety, product improvement through continuous research, running steadily more efficient programs for employee qualification and stepping up communication with Clariant's stakeholders. Our environmental goals, such as steadily decreasing the specific consumption of water and power as well as reducing waste and pollution, have a long-term perspective.

KNOW-HOW AND EXPERIENCE

Moreover, we regard comprehensive product stewardship as the indispensable prerequisite for successful business dealings. It is the only way to minimize risks and optimize business opportunities. We are convinced that it will be essential to understand our customers' needs. Innovation and customer focus is the key to our business. We permanently develop better and new products and services to add value to our customers and to our environment. Concurrently we secure that our products can be used over their entire life cycle in a safe manner for employees, customers, the public and the environment.

TERMS FOR COLORANTS, DYES AND ORGANIC PIGMENTS

Colorants are part of everyday life and are used in numerous applications.

»Colorants« is the generic term for »dyes« and »pigments«. However there is currently no real uniform definition of the term »colorant«.

Additionally, as legislation is steadily becoming more stringent, the interest in the detailed composition of products put on the market is increasing. Therefore ETAD saw the necessity of having a clear reference for the term »colorant«, since different regulatory bodies use the word in slightly different ways. We are following ETAD's description for the terms »dye«, »pigment« and »colorant« which read as follows:

- **A dye** is an intensely colored or fluorescent organic substance, which imparts color to a substance through selective absorption of light. Dyes are soluble and/or go through an application process which, at least temporarily, destroys any crystal structure of the coloring substance.
- **A pigment** is a colored, black, white or fluorescent particulate organic or inorganic solid which is usually insoluble in, and essentially physically and chemically unaffected by, the vehicle or substrate in which it is incorporated. Pigments retain a crystal or particulate structure throughout the coloration process.
- **A colorant** is a product intended to impart or modify the color of a substrate. In order to do this, the colorant will possess the ability to change the color of reflected or transmitted light as the result of wavelength-selective absorption.

In addition, a colorant may also contain deliberately added components, which

- Maintain the properties of the colorant during production and use;
- Influence specific properties of the colorant as fitting to its application.

These added components should be termed as colorant additives.

Furthermore, depending on the production process, a colorant may also contain certain non-intentionally added substances (residues of starting materials, by-products).

PRINCIPLES OF THE COLORATION OF CONSUMER GOODS, FOOD PACKAGING AND TOYS

For colorants that are used for the coloration of consumer goods, food packaging and toys the parameters relating to

- purity
- migration fastness
- toxicological properties

are of essential importance.

With these criteria the risk evaluation of colorants serves as the basis for the suitability of the colorants for specific areas of application.

Although the legislation relating to food contact materials has made much progress in recent years - especially with reference to plastic materials intended to come into contact with food – currently the extent of specific EU legislation in food contact is limited to plastics, regenerated cellulose, ceramics and some classes of coatings.

At present there is still no comprehensive, uniform EU legislation with regard to food packaging, consumer goods and toys for colorants.

However, with regard to the purity of colorants that are used in this application, European Resolution AP (89)1 »On the use of colorants in plastic materials coming into contact with food« has been in place for many years and is aimed at a uniform EU legislation. It demands purity criteria for colorants that are used for the coloration of food packaging made of plastics (for details see section 3). These purity criteria with regard to heavy metals have been adopted by most of the member states as well as in many non EU countries.

The foundation of the food contact materials and articles legislation is the Framework Regulation (EC) No. 1935/2004 (superseding Directive 89/109/EEC) which sets out the scope of the legislation, the general requirements and also provides Regulations/Directives on specific materials.

With regard to migration fastness this regulation states in Article 3, that »materials and articles including active and intelligent materials and articles« shall be manufactured in compliance with good manufacturing practice so that, under their normal or foreseeable conditions of use, they do not transfer their constituents to food-stuffs in quantities which could:

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

In addition to this the migration fastness is subject to regulations in numerous member states.

The evaluation of the physical, chemical, toxicological and ecotoxicological properties of a colorant are of paramount importance in order to be able to assess whether the use of a specific product might present an unacceptably high risk for man and environment.

4.1 – Purity

Numerous countries have specified limit values for certain heavy metals, soluble heavy metal ions and primary aromatic amines as purity requirements that have to be complied with (see overview table on page 35 for food packaging and on page 41 for toys).

However, the purity requirements with regard to heavy metal limits and the content of primary aromatic amines are harmonised to a large extent in the EU member states.

Apart from small deviations, the following heavy metal limits, laid down in the European Resolution AP (89)1 (extractables in 0.1 N HCl) and referring to the colorant as such, are currently valid in the EU for colorants. Also non EU countries like Australia have adopted AP (89)1.

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

Additionally Resolution AP (89)1 regulates the content of the following organic substances:

The content of primary unsulfonated aromatic amines, soluble in 1 molar hydrochloric acid, must be less than 500 ppm (expressed as aniline).

For benzidine, β -naphthylamine and 4-aminobiphenyl a limit value of 10 ppm in total or individually applies. 2-methyl-4-chloroaniline should be treated in the same way.

For sulfonated aromatic amines (aromatic amino sulfonic acids = AASA) a limit value of 500 ppm, calculated as aniline sulfonic acid, should not be exceeded.

The extractable amount of carbon blacks in toluene must not be more than 0.15 %.

The content of polychlorinated biphenyls (PCB) must not exceed 25 mg/kg.

However, in the case of toys the limit values do not relate to the colorant used but to the finished article (EN 71-3).

4.1.1 – Purity criteria

FOOD PACKAGING AND TOYS

As mentioned under section 5.3.3 on page 36 regarding Directive 2009/48/EC (Toy Safety Directive) we have determined the total contents (after acid digestion) of the heavy metals.

The observation of the heavy metal limits shown in the table below applies to products whose chemical structure does not contain a heavy metal molecule. Therefore - unless otherwise noted – the products mentioned in this brochure meet the following purity criteria on the basis of regular analytical tests:

The maximum total content of the following elements is:

ELEMENT	PPM
Aluminium	1000
Antimony	100
Arsenic	10
Barium	100
Boron	250
Cadmium	5
Chromium	10
Cobalt	25
Copper	1000
Lead	50
Manganese	1000
Mercury	25
Nickel	100
Selenium	100
Strontium	1000
Tin	1000
Zinc	1000
Primary aromatic amines	500*
Aromatic amino sulfonic acids (if appropriate)	500 **
4-aminobiphenyl, benzidine 2-naphtylamine, 2-methyl-4-chloroaniline	10

* Calculated as aniline

** Calculated as aniline sulfonic acid

By observation of these stringent criteria, being total contents, the requirements specified in the BfR Recommendation IX and European Resolution AP (89)1 relating to the extractable heavy metal trace impurities and free primary aromatic amines in colorants are automatically met.

Colorants which according to their chemical structure do contain a heavy metal, i. e.

- Copperphthalocyanine pigments
- Cr (III) complexes
- Cobalt complexes
- Nickel complexes

also meet the above heavy metal limits – except for the complexed heavy metal. For the complexed heavy metal the extractable content has to be considered on a case by case basis. In certain cases other heavy metals may be present as impurities in slightly increased amounts. For these heavy metals the extractable content has to be considered as well.

The individual extractable content of the addressed heavy metals can be obtained upon request.

For single products based on non complexed organic pigments or dyes however for certain heavy metal(s) the extractable content has to be considered due to the manufacturing process.

4.1.2 – Purity criteria

COSMETICS

For the products designed for cosmetic applications we established a set of stringent purity criteria.

Based on regular tests the maximum content of the following elements** is:

ELEMENT	PPM
Arsenic	5
Lead	20
Mercury	1
Antimony	60
Copper	100****
Chromium	25
Zinc	100
Barium	100***
Cadmium	50***
Selenium	100***
Cobalt	25
Nickel	25
Primary aromatic amines (extract. in 1N HCL)	100*****
4-aminobiphenyl, benzidine 2-naphtylamine, 2-methyl-4-chloroaniline	10

} together
max.
200
ppm

** Total content

*** Soluble content in 0.1 N HCl

**** Ionogenic content in case of copper phthalocyanine pigments
or other copper complexes.

***** Calculated as aniline.

Information of the methods used by Clariant for determining the trace amounts of heavy metals in colorants and for determining the primary aromatic amine content is given in section 4.4 (Test methods).

4.2 – Migration fastness

For the suitability of colorants for the coloration of food packaging, consumer goods and toys lowest possible migration from the colored article onto the food is of essential importance.

The migration is among other criteria dependent upon

- The properties of the packaging material used
- The type and quantity of other additives (and their possible interaction with the colorant) contained in the packaging material such as anti-oxidising agents etc.
- The concentration and the properties of the colorants
- The application procedure
- The food type and the storage conditions

Therefore, as prescribed by the law, it is the processor of the colorants and not the colorant manufacturer who has to ensure by suitable practical trials that no colorants, not even in traces, migrate onto the foods when the colored food packaging is employed for its intended use. This similarly applies to toys and other consumer goods.

As already mentioned above, the Framework Regulation (EC) No. 1935/2004 provides Regulations / Directives on specific materials.

A specific regulation for plastics has been in place for many years. With Regulation (EU) No. 10/2011 (superseding Directive 2002/72/EC) is an important revision of the regulation of food contact plastics. This regulation, which has been already amended by the Regulation (EU) No. 1282/2011 and the Regulation (EU) No. 1183/2012, lists permitted monomers and approved additives in plastics (Union List), and sets overall and specific migration limits. The updated rules on food simulants and migration testing provided by this regulation will supersede those in Directive 78/142/EEC and the Annex to Council Directive 82/711/EEC.

Plastic materials and articles shall not transfer their constituents to foods in quantities exceeding the specific migration limits (SML) set out in Annex I of the Regulation. Those specific migration limits (SML) are expressed in mg of substance per kg of food (mg/kg). For substances for which no specific migration limit or other restrictions are provided in Annex I, a generic specific migration limit of 60 mg/kg shall apply. In terms of the overall migration limit plastic materials and articles shall not transfer their constituents to food simulants in quantities exceeding 10 milligrams of total constituents released per dm² of food contact surface (mg/dm²).

Plastic materials and articles shall not release primary aromatic amines (PAA), excluding those appearing in Table 1 of Annex I, in a detectable quantity into food or food simulant. The detection limit is 0.01 mg of substance per kg of food or food simulant. The detection limit applies to the sum of primary aromatic amines released.

As already mentioned above, only the manufacturer of the relevant plastic material or article is in the position to ensure by suitable practical migration tests that – in this case – the migration limit of PAA is not exceeded.

4.3 – Toxicological properties

With regard to 1907/2006/EC (REACH Regulation) certain sets of toxicological data are required for all chemical substances (manufactured or imported >1t/a) by May 2018 at the latest. The scope of data to be provided depends on the quantity of the substance produced in or imported into the EU. For substances with quantities of 1t/a < 10 t/a the following toxicological endpoints must be covered:

- Acute toxicity
- Corrosion/irritation (in-vitro test) of skin and eye
- Sensitization
- Mutagenicity (in vitro test on bacteria)

For quantities > 10 t/a additional tests are requested:

- Skin/eye irritation (in-vivo test)
- Mutagenicity (e.g. HPRT/Chromosome Aberration)
- Toxicity after repeated application (28 day study)
- Screening on reproductive/developmental toxicity

For organic pigments their significantly low solubility in water and (organic) application media is the main driving property resulting in no or very low bioavailability and/or toxicity. Potential labelling of the sales products might be caused by hazardous impurities (e.g. residual raw materials) and/or by using certain additives.

Since organic pigments are usually combined with other materials, e.g. a pigmented system typically contains only a small percentage of a pigment, the exposure is reduced significantly in the final application.

4.4 – Test methods

IMPORTANT TESTS SPECIFIED IN THE LEGISLATION ARE DESCRIBED BELOW

4.4.1 Determination of the heavy metal trace impurities

Trace contents of heavy metals in Clariant colorants are determined either by inductively coupled plasma optical emission spectrometry (ICP-OES) or inductively coupled plasma mass spectrometry (ICP-MS) after microwave assisted digestion. With these methods the total content of the corresponding elements in the commercial product is determined. If values close to the required limit values are found, to ensure compliance another test in accordance with DIN 53 770 »Pigments and extenders – Determination of matter soluble in hydrochloric acid« is carried out. In certain cases, e.g. the determination of ionogenic copper in copperphthalocyanine colorants, a modified method based on DIN 53770 is used.

4.4.2 Determination of unsulfonated primary aromatic amines (PAA)

Testing of the colorants mentioned in this brochure for unsulfonated primary aromatic amines is done in accordance with DIN 55 610 (also ETAD analytical method no. 212).

4.4.3 Detection of prohibited azo dyes on dyed textile consumer goods

The tests must be carried out on the colored end article. One of the methods relating to textiles is laid down in EN 14362-1:2012.

4.4.4 Determination of migration

Since manufacturers have no influence on subsequent processing, processors themselves are obliged in accordance with statutory requirements (e.g. Recommendation IX, Federal Institute for Risk Evaluation) to test the »color migration« under simulated service conditions on the end article. In Germany this must be done in accordance with e.g. »Plastics in the Food Trade« Part B/II/IX – Testing of colored consumer goods made of plastics and other polymers for color migration – as at July 1, 1972.

Other test conditions will be found e.g. in:

- European Resolution AP (89)1 of September 13, 1989
- Paper and board intended to come into contact with foodstuffs – Determination of color fastness of dyed paper and board; German version EN 646:2006 (superseding DIN 53991)
- USA: FDA, 21 CFR Ch. I, § 176.170 (Uncoated or Coated Paper and Paperboard)
- Regulation (EU) No.10/2011 (global migration and PAA)

4.4.5 Saliva and perspiration fastness

Testing to ensure that colors from children's toys are not transferred to the mouth, mucous membranes or the skin under the anticipated conditions of use is done e.g. in Germany in accordance with DIN 53 160. As with the test for migration, this test must be carried out by the manufacturer of the end article.

LAWS AND REGULATIONS

5.1 DEFINITIONS

Important terms from the field of legislation and those relating to consumer goods, food packaging and toys are explained below.

5.1.1 Law

A law is a general collection of rules that is designed to be permanent and is applicable to a specific range of cases. It is also a prerequisite of a law (in the formal sense) that it has been enacted by the responsible legislator, i. e. the German Federal or Land parliament. It is binding for all citizens.

5.1.2 Ordinance (national)

An ordinance differs from a law simply in that it has been enacted not by the legislator (legislative) but by the executive, though in accordance with Art. 80 Basic Law (Germany) a special authorization principle is required (legal reservation). In other respects the ordinance, just like the law, is a general collection of rules and is binding for all citizens.

5.1.3 EU Directive

EU Directives are defined goals that form the basis of the obligation of the Member States to achieve the prescribed goals; the Member States are free to decide in what form and with what means they do this. Directives are thus not directly applicable laws but need to be transposed by the Member States into national law. (Exception: a directive can affect EU citizens directly if a Member State does not transpose the Directive as prescribed. Citizens can, if appropriate, pursue claims for damages against the State for failure to adopt the directive).

5.1.4 EU Council Regulation

An EU Council Regulation is a general collection of rules enacted by the European Parliament that is generally applicable in all Member States from the day it comes into force. It does not need to be transposed by the Member States into national law.

5.1.5 European Resolution

A resolution is a non-binding expression of opinion without any legal force.

5.1.6 Recommendation

Recommendation is a declaration by means of which someone describes something as good or advantageous for someone else and therefore advises, suggests or proposes it to him.

A recommendation similarly has no direct legal force. It can however have direct legal force if, like a DIN standard, it is used to give concrete form to a law.

5.1.7 DIN standard

DIN standard is a recommendation on technical procedures issued by the German Institute for Standardization, which is aimed at manufacturers or generally at those who have to provide technical services. A DIN standard is therefore not a direct act of legislation. DIN standards can however acquire legal significance if reference is made in laws to »the generally recognized rules of technology«. DIN standards are used to give substance to this non-specific legal term. To that extent they are binding.

5.1.8 Positive lists

In some countries there are positive lists of colorants with the status of an ordinance, which may be used for coloring plastics in contact with food.

An example here is France, though in this case the colorants additionally have to meet specific purity criteria.

5.1.9 Individual approvals

In certain countries individual commercial products for defined fields of application have to be approved officially for the coloration of food packaging etc. The Food Contact Notification (FCN) in the USA is an example of this.

5

LAWS AND REGULATIONS

5.1.10 Consumer Goods

In Germany consumer goods are subject to the Food, Consumer Goods and Feed Act (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch (LFGB)).

As defined by Article 2 para. 6 of the LFGB consumer goods are

1. Materials and articles in the sense of Article 1 para 2 of the Regulation (EC) No 1935/2004 that are intended to come into contact with food
2. Packs, containers and other packaging intended to come into contact with cosmetic products;
3. Articles that are intended to come into contact with the mucous membranes of the mouth;
4. Articles that are intended for body care;
5. Toys and joke articles;
6. Articles that are intended to come into more than temporary contact with the human body such as clothing, bed linen, masks, wigs, hair pieces, false eyelashes, bracelets;
7. Cleaners and care products intended for household use or for consumer goods as defined in no.1;
8. Impregnating agents and other finishing products for consumer goods as defined in no. 6 that are intended for household use;
9. Products and articles for freshening the air in rooms that are intended for human occupation.

5.1.11 Food packaging

Food packaging comprises articles in accordance with the German LFGB (adopting the Regulation (EC) No 178/2002) that are intended to be used in the manufacture, treatment, placing on the market or consumption of foods and thereby to come into contact with the foods or to act on these (LFGB, Article 2, para 6, 1.).

5.1.12 Toys

According to the Directive 2009/48/EC toys are regarded as products that are designed or intended for use in play by children up to the age of 14.

5.2 IMPORTANT GENERAL LAWS AND REGULATIONS (ORDINANCES)

5.2.1 Regulations for packaging materials

CONEG-Regulation (USA)

The aim of the CONEG (Coalition of Northeastern Governors) regulation is to eliminate lead, cadmium, mercury and chromium (VI) in packaging and packaging materials.

The requirements are:

No packaging or packaging component shall contain lead, cadmium, mercury and chromium (VI) that has been introduced in elemental form intentionally during manufacture or sale and the total concentration of the four elements shall not exceed 100 ppm (as from January 1, 1994).

EU Directive 94/62/EG (December 20, 1994)

This Directive contains virtually the same requirements as the above-quoted CONEG regulation.

The concentration of lead, cadmium, mercury and chromium (VI) in packaging or packaging components must not exceed cumulatively the following values: 100 ppm (after June 30, 2001)

5.2.2 EU-Directive 2002/61/EC [Regulation (EC) No 552/2009 of 22 June 2009 amending Regulation (EC) No 1907/2006 (REACH)]

Azo dyes which, by reductive cleavage of one or more azo groups, may release one or more of the 22 listed aromatic amines, in detectable concentrations, i. e. above 30 mg/kg (0,003 % by weight) in the articles or in the dyed parts thereof, according to the specified testing methods, shall not be used, in textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity, such as:

- clothing, bedding, towels, hairpieces, wigs, hats, nappies and other sanitary items, sleeping bags,
- footwear, gloves, wristwatch straps, handbags, purses/wallets, briefcases, chair covers, purses worn round the neck,
- textile or leather toys and toys which include textile or leather garments,
- yarn and fabrics intended for use by the final consumer.

The test has to be carried out with the colored end article (please refer to section 4.4.3).

For additional information please refer to the explanatory notes (legend) of the column 2002/61/EC of the table.

5.2.3 Regulation (EC) No 648/2004 of 31 March 2004 on detergents

This regulation establishes rules designed to achieve the free movement of detergents and surfactants for detergents in the EU market while, at the same time, ensuring a high degree of protection of the environment and human health.

Surfactants and detergents containing surfactants shall meet the biodegradability criteria as laid down in the regulation.

The regulation impacts colorants in the way that colorants may contain surfactants in the sense of the regulation. In order that such colorants comply with the Regulation the contained surfactants must meet the biodegradability criteria mentioned above.

5.2.4 Regulation (EC) No 1223/2009 of 30 November 2009 on cosmetic products

This regulation establishes rules to be complied with by any cosmetic product made available on the market, in order to ensure the functioning of the internal market and a high level of protection of human health.

As laid down in the regulation a »Cosmetic product« means any substance or mixture intended to be placed in contact with the external parts of the human body (epidermis, hair system, nails, lips and external genital organs) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance, protecting them, keeping them in good condition or correcting body odours.

Colorants which are allowed for coloration of cosmetic products are laid down in Annex IV (List of colorants allowed in cosmetic products) of the regulation.

The approved colorants are subject to the following categories (product type, body parts):

- 1 = No use restrictions
- 2 = Not to be used in eye products
- 3 = Not to be used in products applied to mucous membranes
- 4 = For rinse-off products only

5 LAWS AND REGULATIONS

5.2.5 Japan: Colorants for Cosmetics and drugs regulated by the Pharmaceutical Affairs Law.

In this law, a cosmetic product is defined as a product which makes a human body clean, beautiful or attractive, changes his/her appearance, and keeps hair and skin healthy by applying or atomizing it. However, the cosmetic product having effect of whitening, deodorant, protective effect, sunscreen, hair dye or hair growth etc. is regulated as a quasi-drug. There was a de-regulation concerning cosmetic products in 2001 and new restricted/negative lists for cosmetic product's ingredients were published. At the same time, cosmetic products are required to be labelled with all its ingredients. For colorants, this law specifies the purity criteria with detailed test procedure for each C.I. that may be used for drugs, quasi-drugs and cosmetics.

Permitted use categories are determined by classification into three Lists:

- List 1 – for application in all drugs and cosmetics (including Lip/Oral, Eye Area, External and Rinse-off)
- List 2 – for application in cosmetics (including Eye Area, External and Rinse-off)
- List 3 – for application in cosmetic intended not come into contact with mucous membranes (including Eye Area but no eyeliner, External and Rinse-off)

5.3 SPECIAL LAWS

The global purity requirements that we are aware of for colorants for the coloration of consumer goods, food packaging and toys are described below.

We have no information on specific requirements of countries that are not mentioned here.

5.3.1 Consumer goods

Chile

Fija Limite Maxima Permissible De Plomo En Pinturas Que Indica; No. 374 of June 18, 1997

This law limits the maximum lead content in dried paints to 0.06% (600 ppm).

Germany

LFGB (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch - Food, Consumer Goods and Feed Act) – Revised version of August 22, 2011

In September 2005 the previous LMBG (Lebensmittel- und Bedarfsgegenständegesetz – Food and Consumer Good Law edited 1974) has been replaced by the new LFGB (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch - Food, Consumer Goods and Feed Act) adopting the Regulation (EC) No. 178/2002 (laying down the general principles and requirements of food law, establishing the European Food, Safety Authority and laying down procedures in matters of food safety).

Many paragraphs of the former LMBG are maintained in the new law. At the same time the regulations relating to tobacco products are no longer part of the LFGB and are now summarized in the preliminary Tobacco Law.

The Food, Consumer Goods and Feed Act contains general statutory regulations on the health protection of people in respect of the manufacture, placing on the market, treatment and consumption of

- food (section 2)
- feeding stuffs (section 3)
- cosmetic products (section 4)
- other consumer goods (section 5)

In the context of the coloration of consumer goods, food packaging and toys, the fifth section »Trade with other consumer goods« is of fundamental importance.

In accordance with § 30 »Prohibitions for health protection« it is forbidden to manufacture or treat consumer goods in such a way that, when used in accordance with the intended or anticipated use, they are likely to damage health especially as a result of toxic substances or impurities.

The purity requirements generally listed in § 30 are specified in Germany by the heavy metal limit values given in Recommendation IX (»Colorants for the coloration of plastics and other polymers for consumer goods«) of the Federal Institute for Risk Evaluation.

In accordance with § 31 »Migration of substances to foods« consumer goods as defined in § 2, para (6) No.1 shall be manufactured in the way that, under their normal or foreseeable conditions of use, they do not transfer their constituents to foodstuffs in quantities which could:

- endanger human health or
- bring about an unacceptable change in the composition of the food or
- bring about a deterioration in the odor, organoleptic characteristics or appearance thereof

The migration ban described in § 31 must be ensured by the manufacturer of the end product by suitable practical tests.

Consumer Goods Ordinance: Fifth Ordinance to amend the Consumer Goods Ordinance of April 17, 1997)

The German Fifth ordinance to amend the consumer goods ordinance dated 17 May 1997 has been superseded by the EU Directive 2002/61/EC (please refer to 5.2.2) and consequently is out of force.

Recommendation IX (Federal Institute for Risk Evaluation): Colorants for the coloration of plastics and other polymers for consumer goods (01. 01. 2010)

In Germany the purity requirements specified generally in § 30 of the LFGB (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch - Food, Consumer Goods and Feed Act) are specified in detail in Recommendation IX of the Federal Institute for Risk Evaluation.

In the sense of Recommendation IX a colorant is defined as the coloring agents including any possibly contained auxiliaries such as colorant additives.

In the case of colorant preparations all ingredients additionally contained beside the colorant must be positively listed in the Union List of the Regulation (EU) No. 10/2011 (PIM).

Referring to the colorant the following limit values (extractables in 0.1 N HCl, determined according to DIN 53770) must not be exceeded:

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

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The content of primary aromatic amines, soluble in 1 N hydrochloric acid, must not exceed 500 ppm (calculated as aniline). This limit does not apply to primary aromatic amines with carboxyl or sulfo groups.

The amines benzidine, β -naphthylamine and 4-aminobiphenyl must not be used for the manufacture of colorants for the coloration of plastic consumer goods.

In addition to the purity requirements for colorants, the manufacturer of the end article must ensure that the colorants do not migrate even in traces onto the foods when the consumer article is employed in accordance with its intended use.

Overview table:

HEAVY METAL LIMIT VALUES IN CONSUMER GOODS¹⁾

METAL	CHILE	GERMANY (REC. IX)
	PPM	PPM
As		100
Ba		100
Cd		100
Cr		1000
Hg		50
Pb	600	100
Sb		500
Se		100

1) The maximum concentrations are given in ppm. Details of the limit values can be found in the laws cited.

5.3.2 Food packaging

European Union

Framework Regulation (EC) No 1935/2004

At present there is still no comprehensive, uniform EU legislation with regard to food packaging, consumer goods and toys, especially with regard to colorants.

However, there is the Framework Regulation (EC) No 1935/2004 (superseding Framework Directive 89/109/EEC). This regulation is the foundation of the food contact materials and articles legislation and sets out the scope of the legislation, the general requirements and provides directives on specific materials.

The framework regulation applies to all materials and articles in their finished state (which may include, for example, printing inks and adhesive labels), which are intended to come into contact with food. However, it specifically excludes covering or coating materials that form part of the food and may be consumed with it.

Please note that this regulation is not applicable to colorant products as these products are not finished products in the sense of this regulation. Nevertheless in order to assist our customers to comply with their obligations under the regulation, we would like to inform that:

- As set out in our corresponding MSDSs, the products mentioned in this brochure are deemed not to endanger human health due to their toxicological properties as required by article 3 of the regulation.
- As set out under section 4.1 Purity criteria of this brochure, our products are produced under conditions to comply with specific purity requirements for heavy metals etc. (cf. CoE Resolution AP (89) 1).

- In the scope of our Total Quality Management system we have installed a process which allows us to ensure the traceability of the raw materials used in the production of a specific batch of the product back to the suppliers.

Regulation (EC) No 2023/2006 (GMP)

As already set out above, we have installed a process allowing us to ensure traceability of the raw materials used in the production of a specific batch of the product back to the suppliers. However, Article 2 of this regulation excludes the production of starting substances from its scope of application.

Organic pigments and dyes are starting substances. Therefore the manufacture of organic pigments and dyes is exempted from this regulation.

CoE Resolutions

The Council of Europe (an international organisation, separate from the European Union) has a Committee of Experts on Materials and Articles Coming into Contact with Food which draws up resolutions and guidelines on food contact materials.

Council of Europe Resolutions are not regulations but they provide a basis for national regulations and can reasonably be assumed to influence the corresponding EU Directives.

The following criteria for organic colorants are common elements of Council of Europe Resolutions:

- Purity requirements, i. e. limits on toxic impurities such as heavy metals, aromatic amines, PCBs
- Inventory lists of starting substances and additives
- No detectable migration onto food determined by an appropriate method

Currently there are several Resolutions in place. With regard to colorants the European Resolution AP (89)1 »On the use of colorants in plastic materials coming into contact with food« still serves as the basis for food contact regulations. It aimed already in 1989 at a uniform European legislation and today it is the resolution adopted to the largest extent world-wide.

It demands specific purity criteria for colorants that are used for colouring food packaging made of plastics (see section 4.1). Another European Resolution already in place is the AP(96)5 »On surface coatings intended to come into contact with food-stuffs«. The inventory list in this resolution differentiates between monomers and additives.

Besides these two resolutions, in 2005 the CoE finalized Resolution AP (2005) 2 with regard to printing inks applied to the non food contact surface of food packaging and articles intended to come into contact with food (details see below).

Specific Directives / Regulations

Specific Directives / Regulations are now in place for regenerated cellulose film, ceramics and especially plastics (see below).

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PLASTIC MATERIALS

Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food (former Directive 2002/72/EC)

General

One of the most advanced Food Contact regulations in the EU is the Regulation (EU) No 10/2011 (superseding the Directive 2002/72/EC). It establishes specific requirements for the manufacture and marketing of plastic materials and articles which can reasonably be expected to come into contact with food. This regulation, which has already been amended twice, lists permitted monomers and approved additives (Union list, Annex I) and sets overall and specific migration limits (please refer also to section 4.2).

The material and article shall not release primary aromatic amines (expressed as aniline) in a detectable quantity (DL 0.01 mg/kg food or food simulant).

In addition plastic materials and articles shall not release the following substances in quantities exceeding the specific migration limits below:

Barium	=	1	mg/kg food or food simulant
Cobalt	=	0.05	mg/kg food or food simulant
Copper	=	5	mg/kg food or food simulant
Iron	=	48	mg/kg food or food simulant
Lithium	=	0.6	mg/kg food or food simulant
Manganese	=	0.6	mg/kg food or food simulant
Zinc	=	25	mg/kg food or food simulant

The regulation (originally published as 90/128/EEC) is implemented into German national legislation through the Consumer Goods Ordinance (Bedarfsgegenständeverordnung).

COLORANTS

According to Article 5, para. (2)b) of the Regulation (EU) No 10/2011 colorants are exempted from being listed in the Union list. They are subject to national legislation according to Article 6, para. (2). The general limit for the migration of primary aromatic amines as laid down in Annex V is 10 ppb.

The migration is dependent upon:

- the properties of the plastic material used
- eventually contained additives such as anti-oxidizing agents
- the concentration and the properties of the colorants used
- the application procedure

Therefore as prescribed by the law, it is the manufacturer of the end article who has to ensure by suitable practical migration trials that the limiting value is not exceeded.

Clariant's products for food contact plastic materials

As mentioned above colorants are exempted from being listed in the Union list.

However, to the best of our knowledge there is no legal EU definition of the term colorant. Despite of this fact it is obvious that a colorant may contain other components (»additives«) besides the coloring agent, i. e. the pigment or dye (please refer to section 3. Terms for colorants, dyes and organic pigments).

It is advantageous that any of the components which may be present along with the coloring agent are positively listed in the regulation. Therefore special attention has been paid to the product ranges which are designed for the coloration of plastic materials which may come into contact with food, i. e. the Graphtol and PV Fast range.

The majority of global colorant in these two ranges are constructed in the way that the components (»colorant additives«) which may be present in the way beside the coloring agent are positively listed on the Regulation (EU) No 10/2011.

PRINTING INKS

Currently there is no specific EU legislation concerning printing inks for food packaging, with the exception of Directive 2007/42/EC relating to materials and articles made of regenerated cellulose film, which states that the printed surface of regenerated cellulose film must not come into contact with food.

CoE RESOLUTION AP (2005)2

In the early 90's the ink manufacturers, in cooperation with the Council of Europe (CoE) started an initiative to develop a Resolution on printing inks applied to the non-food contact surface of food packaging materials and articles.

Although CoE activities were stopped in 2003 due to insufficient support of a number of member States, in 2005 the CoE finalized the Resolution AP (2005) 2.

However, the form of this finished CoE Resolution is effectively an incomplete document and, as such, is regarded by the EuPIA members as unworkable and does not contribute to increased consumer protection.

EuPIA Guideline on Printing Inks applied to the non-food contact surface of food packaging materials and articles

Consequently, in the absence of specific EU legislation as well as a workable Resolution, EuPIA developed the Guideline on Printing Inks applied to the non-food contact surface of food packaging materials and articles.

Raw materials are selected according to the criteria set in the EuPIA Exclusion List and, when possible, from relevant listings such as

- the Regulation (EU) No. 10/2011 (Plastics Implementation Measure)
- the Regenerated Cellulose Film Directive 2007/42/EC
- national legislation, including BfR (Bundesinstitut für Risikobewertung – German Federal Institute for Risk Assessment) Recommendations
- Council of Europe Resolutions for direct food contact
- US FDA regulations.

Purity requirements for colorants

All colorants used in the manufacture of packaging inks have to comply with the specifications of the CoE Resolution AP (89)1 or national recommendations on the use of colorants in plastic materials intended to come into contact with food. However, non-soluble barium based pigments can be used provided that the packaging in its finished state meets the specific migration limit (SML) of 1 mg barium/kg food or food simulant.

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EuPIA Exclusion List

Since 1996 the printing ink industry in Europe has been committed to compliance with a voluntary common list for the exclusion of certain raw materials (substances and preparations/mixtures) from printing inks and related products.

The exclusion list is based on the following categories (selection criteria) and individual substances (substances list) that are excluded as raw materials for the manufacture of printing inks and related products (excerpt):

Selection criteria

- Classified as CMR Cat 1. or 2
- Classified as toxic and very toxic
- Colorants based on and compounds of antimony, arsenic, cadmium, chromium (VI), lead, mercury, selenium

Substances list

- Certain dyes e.g. Auramine (Basic Yellow 2) etc.
- Other soluble azo dyes which can decompose in the body to bio-available carcinogenic aromatic amines of category 1 and 2 according to Directive 67/548/EEC or category 1A and 1B according to the CLP Regulation (EC) No. 1272/2008.
- Certain solvents e.g. 2-methoxyethanol etc.
- Plasticizers e.g. chlorinated naphthalenes
- Various compounds such as hexachlorocyclohexane

EuPIA Inventory List

As already mentioned the EuPIA Guideline on Printing Inks Applied to the Non-Food Contact Surface of Food Packaging Materials and Articles already includes a scheme for the careful selection of raw materials to be used in the manufacture of food packaging inks.

Nevertheless, EuPIA had decided additionally to make publicly available a list of all the substances used in the manufacture of food packaging inks, with the aim of implementing a transparent tool for packaging converters and brand owners. At the same time the list is intended to become a reference for competent authorities.

The Inventory List comprises of seven raw material groups used in the manufacture of food packaging inks and in addition a list of monomers and other precursors permitted to be used in the manufacture of plastic materials and articles in contact with food.

The list of additives permitted to be used in the manufacture of plastic materials and articles in compliance with the legal constraints is included:

- **Additives**
 - chemical categories
 - ingredient substances
- **Colorants (i. e. pigments, dyes)**
- **Pigment additives**
- **Polymeric resins**
 - generic groups
 - monomers/precursors/raw material
- **Solvents**
- **Energy Curing Monomers**
- **Photo-initiators**
 - List of monomers and other precursors permitted to be used in the manufacture of plastic materials and articles in contact with food, including additives permitted to be used in the manufacture of plastic materials and articles in contact with food.

Belgium

Belgisch Staatsblad - Moniteur Belge July 24, 1992, page 16719

11. Mai 1992 – Arrête royal concernant les matériaux et objets destinés à entrer en contact avec les denrées alimentaires.

The following purity requirements refer to the colorants:

The soluble amounts of heavy metals or heavy metal ions in 0.1 molar hydrochloric acid must not exceed the following limit values:

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

The content of unsulfonated primary aromatic amines, soluble in 1 molar hydrochloric acid, must not exceed 500 ppm (calculated as aniline).

The content of benzidine, β -naphthylamine and 4-aminobiphenyl must not exceed a limit value of 10 ppm individually or in total.

France

French positive list

Colorants for the coloration of plastics for food contact must comply with two regulations in France.

- a) The colorants must meet specific purity criteria, which originally were described in »Circulaire No. 176« (of December 2, 1959). Meanwhile France has adopted the purity criteria of the Resolution AP (89) 1 (all values are extractables in 0.1 N HCl).

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

The limit values given must not be exceeded.

The total content of free aromatic amines must be less than 500 ppm.

- b) Moreover, the dye or pigment contained in the colorants must be included in the list appearing in Circulaire No. 176 »Liste des pigments et colorants admis dans les emballages placés au contact de denrées alimentaires« or in the subsequently published appendices. The colorants are given here with the Colour Index, the generic name, CAS no. or the chemical name of the reactants.

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It should be noted that in the Appendix to Circulaire No. 176 of August 11, 1993 the previously listed pigments based on 3,3'-dichlorobenzidine for use in articles in contact with food were deleted from the French positive list.

In addition the current »reading« of the French Positive List requires a positive listing of any contained colorant additives on the Union List of the Regulation (EU) No. 10/2011 (PIM).

c) For Carbon Blacks France has adopted the purity criteria of Resolution AP (89) 1.

Germany

Basic requirements for food packaging are governed by the LFGB (Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch – Food, Consumer Goods and Feed Act) (see section 5.3.1).

Special purity requirements for the colorants are given in Recommendation IX (Federal Institute for Risk Evaluation of (01.01.2010), (see section 4.3.1).

Greece

Greek Law No. 385/1995 – Government Gazette No. 714/20 of August 1996

This law specifies purity criteria for colorants that are used for the coloration of food packaging made from plastics. The purity criteria correspond to those of AP (89) 1 of September 13, 1989.

Thus, the maximum soluble amount of the following metals and metal ions in 0.1 molar hydrochloric acid must not exceed the limit values given below:

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

The content of primary unsulfonated aromatic amines, soluble in 1 molar hydrochloric acid, must be less than 500 ppm (calculated as aniline).

For benzidine, β -naphthylamine and 4-aminobiphenyl a limit value of 10 ppm in total or individually applies.

For sulfonated aromatic amines a limit value of 500 ppm, calculated as anilinesulfonic acid, must not be exceeded.

The extractable amount of carbon blacks in toluene must not be more than 0.15 %.

The content of polychlorinated biphenyls (PCB) must not exceed 25 mg/kg.

Italy

Decreto Ministeriale of March 21, 1973 and subsequent amendments - Last update Decreto Ministeriale February 4, 2013, No. 23

The law demands certain purity criteria for colorants that are used for the coloration of food packaging made of plastics and rubber.

Thus, the maximum soluble amount of the following metals and metal ions in 0.1 N hydrochloric acid must not exceed the limit values given below:

METAL	PPM
As	50
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

The content of primary aromatic amines must be less than 500 ppm (calculated as aniline).

The extractable amount of carbon blacks in benzene must not be more than 0.1%.

For the coloration of food packaging made of paper and regenerated cellulose the »decreto ministeriale 22, December 1967, no. 28» should be consulted.

Netherlands

Verpakkingen en gebruiksartikelen – Regeling Verpakkingen en gebruiksartikelen 2.2.1 – Bijlage Deel A- HOOFDSTUK 1- KUNSTSTOFFEN (2012)

As defined in »4. Kleurstoffen en pigmenten«, the following purity requirements refer to the colorants:

The soluble amount (0.1 N hydrochloric acid) of the following heavy metals or heavy metal ions must not exceed the limit values given below:

METAL	PPM
As	100
Ba	100
Cd	1000
Cr	1000
Hg	50
Pb	100
Sb	2000
Se	100

The content of primary aromatic amines soluble in 2 N ethanolic hydrochloric acid must not exceed 500 ppm.

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Portugal

Plastics for food contact NP 3254 (1990)

The Portuguese Law NP 3254 (1990) describes the purity requirements for colorants for the coloration of plastic packaging in contact with food.

Thus, the maximum soluble amount of the following metals and metal ions in 0.1 molar hydrochloric acid must not exceed the limit values given below:

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	250
Se	100
Zn	2000

The content of primary aromatic amines, soluble in 1 molar hydrochloric acid, must be less than 500 ppm (calculated as aniline).

For benzidine, β -naphthylamine and 4-aminobiphenyl a limit value of 10 ppm applies.

The extractable amount of carbon blacks in toluene must not be more than 0.15 %.

The content of polychlorinated biphenyls (PCB) must not exceed 50 mg/kg (expressed as decachlorobiphenyl).

The monochlorobiphenyl content contributes with $\frac{1}{50}$ of its value to the total PCB value and the dichlorobiphenyl content with $\frac{1}{5}$ of its value.

Spain

Real Decreto 847/2011 of June 17, 2011

This law describes purity criteria for colorants that may be used for the coloration of plastics in contact with food.

These purity criteria are described in Annex II of the Real Decreto 847/2011 of June 17, 2011 and refer to the colorant.

The soluble amount (0.1 N hydrochloric acid) of the following heavy metals or heavy metal ions must not exceed the limit values given below:

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

The content of free primary aromatic amines (calculated as aniline) must be a maximum of 500 ppm. This limit applies to primary aromatic amines which do not contain carboxyl or sulfonic groups.

The purity criteria for Carbon Black are laid down in the Regulation (EU) No. 10/2011.

Switzerland

Verordnung des EDI über Bedarfsgegenstände - Ordinance of the EDI concerning consumer goods of November 23, 2005 (817.023.21, status April 1, 2013)

This ordinance describes consumer goods in the sense of Article 33 of the »Lebensmittel- und Gebrauchsgegenständeverordnung« (LGV) - Food and Consumer Goods Ordinance of November 23, 2005, status January 1, 2013 and defines the requirements applicable to them.

Consumer goods must transfer substances to food only in quantities which

- (a) are harmless to health
- (b) are technically unavoidable;
- (c) do not bring about a change in the composition of the food or of the organoleptic characteristics of the food

Plastic materials which are intended to come into contact with food are regulated under section 3, Article 6 and 7. Authorized substances for the manufacturing of plastic materials which are intended to come into contact with food are laid down in Annex 1 (lists I, II and III).

In Annex 1, III (List of specific requirements like purity criteria etc.) under No. 9 purity criteria for pigments and dyes are laid down:

The content of metals and metalloids in the pigment or dye that is soluble in 0.1 molar hydrochloric acid must not exceed the following values:

METAL	PPM
As	100
Ba	100
Cd	100
Cr	1000
Hg	50
Pb	100
Sb	500
Se	100

The content of unsulfonated primary aromatic amines must not exceed 500 ppm (calculated as aniline).

The content of benzidine, β -naphthylamine and 4-aminobiphenyl must not exceed a limit value of 10 ppm either individually or in total.

The content of sulfonated aromatic amines (calculated as aniline-sulfonic acid) must not exceed 500 ppm.

The content of extractable polychlorinated biphenyls must not exceed 25 ppm, expressed as decachlorobiphenyl.

Cadmium pigments are prohibited.

Under Section 8b, Article 26e packaging inks intended to come into contact with food are regulated.

Lists of authorized substances for the manufacturing of packaging are laid down in Annex 1 (Lists I, II and III for plastic materials) and Annex VI (lists 1 to 5), subject to the requirements set out therein.

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In Annex 6, list 2 pigments and dyes are listed by both their Colour Index Generic name as a descriptor of the essential colorant and also by their CAS number.

The legal status of the additives which may be present in pigments has been clarified between ETAD and the responsible Swiss Authority (FOPH). Accordingly colorant additives are currently not covered by the Ordinance.

Colorant products are also placed on the market in what are generically referred to as »pigment preparations«. These can be liquid e.g. an aqueous (or non-aqueous) dispersion or solid where selected pigments are pre-dispersed in a carrier resin. For such cases all the components of the pigment preparation need to be listed.

North America

Canada

In Canada, all materials used for food packaging must comply with Division 23 of the Food and Drugs Act and Regulations. Section B.23.001 prohibits the sale of foods in packages that may release harmful substances to the food contents. This regulation clearly puts the onus on the seller of the food to insure that any material he uses to package food is safe for the consumer.

However, because of the general nature of this regulation, and in the absence of any positive listing of acceptable ingredients, the Health Products and Food Branch of Health Canada will, upon request, issue letters of opinion (e.g. letters of non objection) on the acceptability of specific materials, by trade names, for use in food packaging applications. The safety of pigments intended for coloring articles that may contact food is assessed on the basis of their chemical constitution, migrational behavior and toxicological characteristics.

Any submission made to the Health Products & Food Branch for a pre-market assessment is strictly voluntarily. The opinion issued by the Branch does not constitute an approval of the material nor does it relieve the seller of the food of its responsibility under section 23.001 of the Food and Drugs Act and Regulations.

USA

FDA Approval

Summary of the regulations concerning food packaging

1. General remarks

The Food and Drug Administration (FDA) regulates color in cosmetics, medical devices, drugs, and food (including food additives in food packaging and articles) in the United States.

FDA regulations are compiled in Title 21 of the Code of Federal Regulations (21 CFR). These regulations can be amended in the Federal Register, or as described below.

FDA regulations are organized in Parts. The Parts that are most relevant to food contact are:

- Part 175 - Adhesives and Coatings
- Part 176 - Paper and Paperboard
- Part 177 - Polymers
- Part 178 - Adjuvants, Production Aids, Sanitizers
- Part 181 - Prior Sanctions
- Part 182 - Gras Substances
- Part 184- Affirmed GRAS Substances
- Part 186 - Food Contact Substances Affirmed as GRAS

For example, detailed regulatory information for colorants for polymers will be found in § 178.3297.

2. Legal and Regulatory Background-FDA Compliance for Food Additives

A food additive is a substance which, when used as intended, is reasonably expected to become a component of food.

A food additive must be already regulated, exempt or precleared.

Three types of food additives are:

- Color Additive (a certified food/drug/cosmetic grade color ingredient directly added)
- Secondary Direct Food Additive (a food additive that creates a technical effect in food during processing but not in the finished food)
- Indirect Food Additive also known as Food Contact Substance (a food additive that come into contact with food as part of packaging, holding, or processing, but are not intended to be added directly to, become a component, or have a technical effect in or on the food).

Indirect Food Additives (Food contact substances) are regulated, exempt, or otherwise cleared.

2.1 Regulated Colorants for Polymers

2.1.1 21 CFR, § 178.3297, Colorants for Polymers

Colorants for polymers are listed in 21CFR § 178.3297, Colorants for Polymers. The colorants are listed with their chemical names and/or with their color index generic names. Many of the colorants are subject to restrictions on:

- Upper limit color concentration in the polymer,
- Polymer types,
- Food types, (aqueous, acidic, fatty, low alcohol, high alcohol), and or
- Conditions of Use

Conditions of Use describe the temperature conditions the colored polymer may be subject to and are described as follows:

- A. High temperature heat sterilized (e.g. over 100 °C/212 °F)
- B. Boiling water sterilized
- C. Hot filled or pasteurized above 66 °C (150 °F)
- D. Hot filled or pasteurized below 66 °C (150 °F)
- E. Room temperature filled and stored (no thermal treatment in the container)
- F. Refrigerated storage (no thermal treatment in the container)
- G. Frozen storage (no thermal treatment in the container)
- H. Frozen or refrigerated storage: Ready prepared foods intended to be reheated in the container at time of use
- I. Irradiation
- J. Cooking at temperatures exceeding 250 deg. F.

2.1.2 Food Contact Notifications

As of January, 2000, the FDA no longer lists cleared substances in 21 CFR § 178.3297. Rather, substances cleared by the FDA as food contact substances will be listed on the FDA webpage. For a complete listing of FDA cleared substances, both 21 CFR § 178.3297 and the FDA webpage must be researched.

The same restrictions as are found in 21 CFR § 178.3297 would be utilized in substances cleared by food contact notifications. It is important to note that only the company who is listed with the cleared substance on the FDA webpage may declare their product as FDA compliant.

2.2 Exemptions from Food Additive Regulation

Exemptions from the Food Additive Regulation include:

- No migration
- Functional Barriers
- Housewares
- Threshold of Regulation

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2.3 Other clearances from the Food Additive Regulation

Certain other colorant clearances are still recognized and utilized in business today. These include:

- Pre-1958 approvals by the FDA or USDA
- Lehman List
- Agency Letters
- Prior Sanction
- Generally Recognized as Safe (GRAS)

South America

MERCOSUL Food Contact Regulation for Plastics Articles

In the scope of this MERCOSUL Regulation criteria related to the polymers, additives and colorants used to produce food contact articles have to be considered.

Currently the colorants purity criteria are laid down in GMC/RES/2010/015. Authorized additives are listed in GMC/RES/2007/032 or GMC/RES/2012/002. Additionally GMC/RES/2012/002 lists approved polymers-or its monomers.

To comply with the regulation the following criteria have to be observed by the colorant:

- the colorant must fulfil the purity criteria as laid down in GMC/RES/2010/015 (please refer to the overview table on page 35)
- eventually contained colorant additives must be listed on the additives positive lists GMC/RES/2007/032 or GMC/RES/2012/002
- all polymers or its monomers must be listed on the relating positive list GMC/RES/2012/002

Asia

China

Hygienic Standard for Uses of Additives in Food Containers and Packaging Materials (GB9685-2008)

This standard specifies principles for uses of additives in food containers and packaging materials, the types of permitted additives, application scope, maximum levels, specific migration limits or maximum permitted quantity as well as other restrictive requirements.

In contrast to the Regulation (EU) No. 10/2011 this Chinese standard differentiates between approved end articles such as e. g. plastic materials, coatings and paper. Additionally there is a differentiation within the plastic materials.

It entered into force on 1 June 2009.

Colorants

The pigment or dye (please refer to definition under section 3, on page 7) must be positively listed in the standard. Additionally the pigment or dye must be approved for the designated application area (e. g. inks, plastics, coating, paper, printing etc.)

Although not expressly stated in the standard it is the common understanding that colorant additives present in colorants (please refer to definition under section 3, on page 7) must be positively listed as well.

Furthermore the following purity requirements apply to the colorant products:

The impurities extracted from the colorant product with 0.1 molar hydrochloric acid must not exceed the following limit values:

METAL	PPM
As	100
Ba	100
Cd	100
Cr (VI)	1000
Hg	50
Pb	100
Sb	500
Se	100

The content of unsulfonated primary aromatic amines, soluble in 1 molar hydrochloric acid, must not exceed 500 ppm (calculated as aniline).

The content of benzidine, β -naphthylamine and 4-aminobiphenyl must not exceed a limit value of 10 ppm individually or in total.

The content of polychlorinated biphenyls (PCB) must not exceed 25 mg/kg.

Due to the complexity of this Chinese Regulation it is not practical to go into further detail in this brochure.

The status of individual products can be obtained upon request.

Japan

Colorants for food packaging come under the Food Sanitation Law issued by the Ministry of Health, Labor and Welfare.

Only products that are not included in a negative list and comply with the non-migration principle can be used as indirect food additives – this includes food packaging and the colorants contained in it.

Furthermore, Japanese associations have voluntarily produced positive lists, arranged by fields of use.

a) Japan Hygienic PVC Association (JHPA) PVC for Food Contact Applications. A code for PVC for safety in use, 12th Revision, March 1999

This association includes the chemical constitutions and the Colour Index designations in its positive list for PVC.

The following heavy metal limit values (total contents) must not be exceeded:

METAL	PPM
As	50
Cd	100
Hg	50
Pb	100

The content of primary aromatic amines, soluble in 0.1 N hydrochloric acid, must not exceed 500 ppm.

5 LAWS AND REGULATIONS

b) Japan Hygienic Olefin and Styrene Plastics Association (JHOSPA), Part 2, Positive List 2 - 3, Colorants, ninth edition, revised as of November 2011

This organization only includes products with their commercial names in its positive list.

The following heavy metal limit values (total contents) must not be exceeded:

METAL	PPM
As	100
Ba*	100
Cd	100
Cr*	1000
Hg	50
Pb	100
Sb*	250
Se*	100

* extractables in 0.1 N HCl

The content of primary aromatic amines, soluble in 0.1 N hydrochloric acid, must not exceed 500 ppm.

c) Additionally, the use of printing inks for food packaging is restricted by a negative list, which is produced by the Japan Printing Ink Makers Association

Australia

Australian standard AS 2070-1999; Plastics materials for food contact use

The Australian regulations for plastic materials in contact with food have practically adopted the corresponding EU regulations. The current version of the Australian Standard AS2070-1999 states that additives used in food contact plastics have to be listed on the Union List of the Regulation (EU) No. 10/2011.

Colorants are exempted from being listed in the Union list of the Regulation (EU) No. 10/2011. Nonetheless the current understanding is that a colorant product is in compliance with the Australian Standard AS2070-1999 if

- the colorant product fulfils the purity criteria of the CoE Resolution AP (89)1 and
- a contained additive – beside the contained pigment - is positively listed in the Union List of the Regulation (EU) No. 10/2011.

OVERVIEW TABLE: HEAVY METAL LIMIT VALUES IN FOOD PACKAGING¹⁾

METAL	As	Ba	Cd	Cr	Hg	Pb	Sb	Se	Zn
Australia	100	100	100	1000	50	100	500	100	
Belgium	100	100	100	1000	50	100	500	100	
EU/AP (89)1	100	100	100	1000	50	100	500	100	
France	100	100	100	1000	50	100	500	100	
Germany (Rec. IX)	100	100	100	1000	50	100	500	100	
Greece	100	100	100	1000	50	100	500	100	
Italy	50	100	100	1000	50	100	500	100	
Japan (JHOSPA)	50	100	100	1000	50	100	250	100	
Mercosul	50	100	100	1000	50	100	500	100	2000
Netherlands	100	100	1000	1000	50	100	2000	100	
Portugal	100	100	100	1000	50	100	500	100	2000
Switzerland	100	100	100	1000	50	100	500	100	
Spain	100	100	100	1000	50	100	500	100	

1) The maximum concentrations are given in ppm. Details of the limit values can be found in the laws cited.

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5.3.3 Toys

European Union

Directive 2009/48/EC of 18 June 2009 on the safety of toys (Toy Safety Directive)

On 20 July 2009 the EU Directive 2009/48/EC (Toy Safety Directive = TSD) was published, which replaces Directive 88/378/EEC.

As with the 1988 Directive there are limits on the amount of elements (heavy metals) that may migrate from the toy. These limits are now prescribed for 19 elements and for 3 categories of toy materials and are considerably lower than the 1988 limits. All limits refer to the end article, i. e. the colored toy.

It transpired that simply passing the onus of providing data up the supply chain does not solve the compliance problem.

We follow ETAD's recommendation for limits on the total content of the elements specified in 2009/48/EC for the colorants that are used for the production of colored toys. These limits are mentioned under section 4.1.1 »purity criteria«.

The »Total Element Content« of a product comes from the presence of unavoidable trace impurities e. g. those ubiquitous heavy metals that are now present in the environment coming both from natural sources as well as from anthropogenic sources, and the presence of a metal as an inherent part of the molecular structure. Trace impurities will be present to a greater or lesser extent in every product.

The recommended limits have been derived from the TSD migration limits for the final toy taking into account the usual colorant loadings in toys.

Although downstream treatment of pigments especially by comminuting, chemical and thermal action for final matrix use by the toy manufacturer (e. g. extruders and dissolvers) will considerably change leaching properties.

1. The observation of these limits (total contents) as well as
2. The »dilution« in the end article together with the
3. »Safety factor« that the limits for the end article are extractables (in diluted HCl) as well as the fact that
4. Migration will only partly take place

enables the toy manufacturer to assess the conformity of his toy with the TSD requirements.

However it must clearly be emphasized that it remains the responsibility of the economic operator placing the article on the market to ensure compliance with all aspects of the Toys Safety Directive.

European Standard EN 71-3:2013

Safety of toys-Part3: Migration of certain elements

The Toy Safety Directive (2009/48/EC) specifies maximum migration limits for three categories of toy materials. The limits for the migration of 19 elements are expressed in milligram per kilogram toy material. The purpose of the limits is to minimize children's exposure to certain potentially toxic elements.

This European Standard specifies requirements and test methods for the migration of the above mentioned 19 elements from toy materials and from parts of toys.

European Standard EN 71-7

Safety of toys-Part 7: Finger paints-Requirements and test methods (Document is currently submitted to the formal vote)

This part of EN 71 specifies requirements for the substances and materials used in finger paints and applies to finger paints only.

Finger paints shall not contain dangerous substances or preparations in amounts which harm the health of children using them.

When tested in accordance with EN 71-3 the concentration of heavy metals shall not exceed the limit values specified in EN 71-3, Category II (liquid and sticky materials).

The single aromatic amines benzidine, 2-naphthylamine, 4-chloro-2-methyl-aniline (4-chloro-o-toluidine) and 4-aminobiphenyl shall not be determinable when tested in accordance with the test method in Annex D.

With the exception of the four above mentioned amines, finger paints shall not contain the primary aromatic amines given in Table 2 of EN 71-7 in a total amount exceeding 20 mg/kg, with no individual amine exceeding 10 mg/kg, when tested in accordance with Annex D. The limitation does not apply to aromatic aminocarbonylic acids or aminosulfonic acids.

Finger paints shall not contain the following impurities above the specified limits in the table below when tested in accordance with Annex E:

IMPURITY	LIMIT (mg/kg)	FINGER PAINTS OF CONCERN
Polychlorinated biphenyls	2	Finger paints containing colorants containing chlorine or manufactured in chlorinated solvents
Hexachlorobenzene	5	Finger paints containing colorants containing chlorine or manufactured in chlorinated solvents
Benzo (a) pyrene	0.05	Only for finger paints containing Carbon Black

Our Cosmenyl brands are tested on more stringent purity criteria than laid down in various food contact regulations with regard to colorants. Therefore it is assumed that finger paints containing Cosmenyl brands up to 2 - 3 % will meet the purity criteria for finger paints.

European Standard EN 71-9

Safety of toys-Part 9: Organic chemical compounds

The EN 71-9 defines requirements for selected organic compounds in certain toys and toy materials.

The considered organic compounds are:

- Solvents
- Monomers
- Preservatives
- Biocides
- Plasticizers
- Processing aids
- Flame retardants
- Coloring agents

The regulation EN 71-9 lists in table 1 the specific toy and toy components with the respective limit requirements for the chemical compounds.

Colorants are concerned by this regulation with:

- 1.) A negative list of colorants (regulation table 2B) which should NOT be included in the concerned toy or toy component.

These colorants are:

- Disperse dyes (Blue 1, Blue 3, Blue 106, Blue 124, Yellow 3, Orange 3, Orange 37/76, Red 1)
- Solvent dyes (Yellow 1, Yellow 2, Yellow 3)
- Basic dyes (Red 9, Violet 1, Violet 3)
- Acid dyes (Red 26, Violet 49)

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2.) The limits for selected primary aromatic amines (regulation table 2C) defined for the concerned toy or toy components:

Primary aromatic amines of Table 2C:

COMPOUND	CAS-NO.	LIMIT IN END-ARTICLE
Benzidine	92-87-5	< 5 mg/kg
2-Naphthylamine	91-59-8	< 5 mg/kg
4-Chloroaniline	106-47-8	< 5 mg/kg
3,3'-Dichlorobenzidine	91-94-1	< 5 mg/kg
3,3'-Dimethoxybenzidine	119-90-4	< 5 mg/kg
3,3'-Dimethylbenzidine	119-93-7	< 5 mg/kg
o-Toluidine	95-53-4	< 5 mg/kg
2-Methoxyaniline	90-04-0	< 5 mg/kg
Aniline	62-53-3	< 5 mg/kg

3.) The limits for selected preservatives (regulation table 2H) for the concerned toy or toy components:

Preservatives of Table 2H:

COMPOUND	ABBR.	CAS-NO.	LIMIT IN END-ARTICLE
Phenol		108-95-2	< 10 mg/kg
1,2-Benzisothiazol-3-one	BIT	2634-33-5	< 5 mg/kg
2-Methyl-4-isothiazolin-3-one	MIT	2682-20-4	< 10 mg/kg
5-Chloro-2-methyl-4-isothiazolin-3-one	CMIT	26172-55-4	< 10 mg/kg
5-Chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one	Cathon (CMIT/MIT)	55965-84-9	< 15 mg/kg
Formaldehyde (free)		50-00-0	0,05 %

Tests for EN 71-9 -Determination of primary aromatic amines Compliance

Colorants which are in compliance with EN 71-9 fulfil the special requirements on the regulated primary aromatic amines and – if applicable - on the regulated preservatives in the scope of EN 71-9. Clariant is aware that the majority of our customers will use the colorants in aqueous systems which will impact the release of the water-soluble regulated primary aromatic amines. The release depends on:

- Intensity of contact with water
- Time of contact (of colorants) with water
- Level of the solubility and/or dispersing of colorants in aqueous media
- The formulation of the customer system in general

To cover this influence of an aqueous environment we have tested our appropriate pigments using the most adverse conditions by means of a strong dispersion in water. These resulting pigment preparations have been tested for the regulated primary aromatic amines of EN 71-9 according to the method laid down in EN 71-10 and 11. However HPLC (high performance liquid chromatography) has been used for determination of the regulated amines.

Beside of the evaluated products there is a series of other products which are manufactured without using one of the amines regulated in the EN 71-9. Therefore it is assumed that if these products are used the amine limits of the EN 71-9 will be observed by the end article.

However the final confirmation of the observation of the limits can only be obtained by testing the toy.

Switzerland

»Lebensmittel und Gebrauchsgegenständeverordnung« (LGV) – Food and Consumer Goods Ordinance of November 23, 2005 (817.02, status January 1, 2013).

Toys are regulated under Section 5, Article 43 of the Food and Consumer Goods Ordinance. The legislation has adopted the terms of the EU Toy Safety Directive 2009/48/EC.

According to Article 44 finger paints, writing, drawing and painting instruments must fulfil the requirements of Article 43, para 2.

Verordnung der EDI über die Sicherheit von Spielzeug (Spielzeugverordnung, VSS) – Ordinance concerning the Safety of Toys of August 15, 2012

Based on Article 43 of the Food and Consumer Goods Ordinance the new Swiss Toys Ordinance implements the essential elements of the new EU Toy Safety Directive 2009/48/EC.

The limit values for heavy metals will follow the limits as laid down in the EN 71, Part 3.

North America

Canada

Canada Consumer Product Safety Act (CCPSA) annexed »Toys Regulations«

Specific substances in surface coatings
Section 23. The surface coating that is applied to a toy must not contain any of the following substances:

- (a) More than 90 mg/kg of total lead;
- (b) A compound of antimony, arsenic, cadmium, selenium or barium introduced as such if more than 0.1% of the compound dissolves in 5% hydrochloric acid after being stirred for 10 minutes at 20 °C or (68 °F) or
- (c) a compound of mercury introduced as such

USA

Standard Consumer Safety Specification on Toy Safety: ASTM F 963-07 e1

This specification describes requirements and test methods for toys that are intended for use by children up to the age of 12. Examples of the requirements are as follows:

Item 4.3.5.1

This standard prohibits the use of paints or similar surface coatings that contain lead or lead compounds and in which the lead content (calculated as elemental lead) exceeds 0.009 % (90 ppm) of the weight of the entire non-volatile content of the paint or the weight of the dried paint film.

Item 4.3.5.2

Surface coatings must not contain any compounds of antimony, arsenic, barium, cadmium, chromium, lead, mercury or selenium whose soluble (0.07 molar HCl; pH between 1.0 and 1.5) metal content referring to the weight of the contained solids exceeds the following limit values (including pigments, fillers and dryers):

METAL	PPM
As	25
Ba	1000
Cd	75
Cr	60
Hg	60
Pb	90*
Sb	60
Se	500

*Consumer Product Safety Improvement Act 2008 16 CFR 1303.101

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Consumer Product Safety Commission, 16 CFR § 1501 - 1518 (January 1, 1994)

Federal Hazardous Substances act regulations

In this law the term »hazardous substance« is described. One of the general aims is to protect children (toys). Maximum application concentrations are given for special products for some chemical substances, e. g.:

Diethylene glycol	<10 %
Ethylene glycol	<10 %
Benzene	<5 %
Toluene, xylene, petroleum distillate	<10 %
Methanol	<4 %
Carbon tetrachloride	<10 ppm
Lead (in paints)	<600 ppm

The Consumer Product Safety Improvement Act (CPSIA) of 2008 requires that nearly all children's products:

- comply with all applicable children's product safety rules;
- are tested for compliance by a CPSC-accepted laboratory;
- have a written Children's Product Certificate (issued by the manufacturer or importer) that provides evidence of the product's compliance.

With a few limited exceptions, all children's products, including toys, manufactured after August 14, 2011 are required to contain no more than 90 parts per million (ppm) of total lead content in accessible parts.

Lead in Paint and Similar Surface Coatings

All children's products, including toys, and some furniture, for adult and children, must not contain a concentration of lead greater than 0.009 percent (90 parts per million) in paint or any similar surface coatings. (The concentration is based on the weight in the non-volatile portion of the dried paint film.) Household paint must also meet this requirement.

Phthalates

Three types of phthalates (DEHP, DBP, BBP) are banned in any amount greater than 0.1 percent (computed for each phthalate, individually) in (1) children's toys and (2) certain child care articles.

A »children's toy« is defined as a consumer product designed or intended by the manufacturer for a child who is 12 years old or younger for use by the child when the child plays.

»Child care articles« are defined as consumer products that are designed or intended by the manufacturer for a child who is 3 years old or younger, to facilitate sleeping or feeding, or to help a child who is sucking or teething.

Three additional types of phthalates (DINP, DIDP, DnOP) are banned (on interim) in any amount greater than 0.1 percent (computed for each phthalate individually) in (1) a children's toy that can be placed in a child's mouth, and (2) child care articles.

Please note that the interim ban on DINP, DIDP, and DnOP only applies to children's toys that can be placed in a child's mouth. A toy that can be placed in a child's mouth is defined as any part of a toy that actually can be brought to the child's mouth and kept there so that it can be sucked or chewed on. If a toy or a part of the toy is smaller than 5 centimeters, it can be placed in the mouth.

South America

MERCOSUL Toys Regulation (NM 300-3)

This MERCOSUL standard establishes the requirements and analytical methods to evaluate the migration from toys and toys parts, except »non accessible materials«, of the elements Sb, As, Ba, Cd, Cr, Pb, Hg and Se. All heavy metal limits refer to the end article, i. e. the colored toy.

Not included in the scope of this standard are packaging materials except if the packaging is part of the toy.

Asia

Philippines

Philippine National Standard (PNS) 1408-3; 1996 Safety of Toys; Part 3 Specifications for migration of certain elements.

The European toy standard EN 71-3 (December 1994) was adopted as Philippine National Standard.

Australia

Australia/ New Zealand Standard AS/ NZS ISO 8124.3:2003 Safety of toys - Part 3: Migration of certain elements.

a) The maximum acceptable element migration from toy materials with the exception of modelling clay and finger paint is:

METAL	MG PER KG TOY MATERIAL
As	25
Ba	1000
Cd	75
Cr	60
Hg	60
Pb	90
Sb	60
Se	500

b) The maximum acceptable element migration from modelling clay and finger paint is:

METAL	MG PER KG TOY MATERIAL
As	25
Ba	250
Cd	50
Cr	25
Hg	25
Pb	90
Sb	60
Se	500

OVERVIEW TABLE : HEAVY METAL LIMIT VALUES FOR TOYS¹⁾

METAL	As	Ba	Cd	Cr	Hg	Pb	Sb	Se
Australia a)	25	1000	75	60	60	90	60	500
Australia b)	25	250	50	25	25	90	60	500
EU EN 71-3:2013	Limit values for 19 elements specified in Categories I, II and II							
EU EN 71-7	Limit values for 19 elements of EN 71-3, Category II							
Switzerland	Limit values following EN 71-3							
USA ASTM F 963-07e1	25	1000	75	60	60	90	60	500

1) The maximum concentrations are given in ppm. Details of the limit values can be found in the laws cited.

6 – Tables

GUIDANCE FOR SYMBOLS

The following tables indicate the formal compliance of products with certain regulations.

However the user of a product is obliged to test it under his specific application and processing conditions, especially with regard to the non-migration principle.

Therefore, as prescribed by the law, it is the processor of the colorants and not the colorant manufacturer who has to ensure by suitable practical trials that no undesired substances, not even in traces, migrate onto the foods when the colored food packaging is employed for its intended use. This also applies similarly to toys and other consumer goods.

For the reader's convenience we have incorporated for each of the products the Colour Index name of the basic colorant including its C.I. and CAS number. Where no data are given, they have not yet been published.

Since the product may contain additional ingredients as well as the basic colorant, the registration status under chemicals law can not be deduced from the given CAS number.

The products marked with * contain a diarylide pigment. These pigments must not be used in polymers if the processing temperature exceeds 200 °C because of possible thermal decomposition which can form e.g. traces of aromatic amines (see safety data sheets, further information also in ETAD INFORMATION NOTICE No. 2 »Thermal Decomposition of Diarylide Pigments« – September 1990).

The product marked with ** is a benzimidazolone pigment that can be processed in polyolefins up to 290 °C.

GUIDANCE FOR SYMBOLS

The following symbols are used in the table:

Recommendation IX (BfR)

● The statement means the product fulfils the purity criteria with regard to heavy metal trace impurities and the content of primary aromatic amines according to Recommendation IX (BfR). Any contained additive (s) is (are) listed on the Regulation (EU) No 10/2011

□* The statement means the product fulfils the purity criteria with regard to heavy metal trace impurities and the content of primary aromatic amines according to Recommendation IX (BfR). Any contained additive (s) is (are) listed on the Regulation (EU) No 10/2011. However the preserving agent is not listed on the Regulation (EU) No 10/2011

□ The statement means the product fulfils the purity criteria with regard to heavy metal trace impurities and the content of primary aromatic amines according to Recommendation IX (BfR). The product contains one or several additive (s) **not** listed on the Regulation (EU) No 10/2011

2002/61/EC

■ The product is based on an azo pigment or non-azo pigment respectively azo dye or non-azo dye which does not fall under this Directive

□ Products based on PY 14, 17, 73, 74, 127, 174/ PR 9, 12, 14, 112, 188, 210, 253, 266: Products based on these azo pigments also do not fall under the mentioned Directive. However due to their chemical structures they do contain an (additional) amine in the molecule which is mentioned under the 22 amines. However this amine is not bonded via the azo group in the molecule

European Resolution AP (89)1

- The product meets the purity requirements of Resolution AP (89)1

EN 71-9

- In compliance with the regulation means that the product meets the actual limits for the regulated primary aromatic amines and - if applicable - the regulated preservatives.
- In compliance with the regulation with limitations means that the product meets the actual limits for the regulated primary aromatic amines and - if applicable - the regulated preservatives if they are used up to a certain level of colorant concentration in the end article. The concentrations are laid down in corresponding data sheets.

Regulation EU (No) 10/2011

- Any contained additive (s) is (are) listed on the Regulation (EU) No 10/2011
- * Any contained additive (s) is (are) listed on the Regulation (EU) No 10/2011. However the preserving agent is not listed on the Regulation (EU) No 10/2011
- The product contains one or several additive (s) **not** listed on the Regulation (EU) No 10/2011.

Swiss Ordinance

- C.I. listed in Annex 6, II List of dyes and pigments, part A or part B

EUPIA Inventory List

- The pigments and any contained additive (s) is (are) listed on the EUPIA Inventory List
- Only C.I. is listed on the EUPIA Inventory List, eventually contained additive (s) is (are) not listed on the EUPIA Inventory List

EUPIA Exclusion List

- Product does not fall under this list. Eventually present impurities which may fall under this list due to the manufacturing process are not considered.

French Positive List

- The product fulfils the requirements
- In compliance with the regulation. However there are specific limitations with regard to concentration and/or application

EN 71-3

- ◆ The product fulfils the heavy metal limits as laid down under section 4.1.1 on page 10
- ❖ 1. The product is based on a heavy metal complex or an inorganic pigment. In these cases the extractable content (0.1 n HCL) has to be considered for the heavy metal which is contained according to the chemical structure.
- 2. The product is based on an organic pigment or dye. However for certain heavy metal (s) the extractable content has to be considered due to the manufacturing process.
- ★ The product fulfils special purity criteria as laid down in section 4.1.2 on page 11

6 – Tables

GUIDANCE FOR SYMBOLS

USA: FDA (all details are shown in the corresponding table on page 80)

- The product is FDA compliant
- The product is FDA compliant with prescribed limitations

CONEG

- The product fulfils the requirements of EU Directive 94/62/EC and the CONEG legislation i. e. the cumulative content of Pb + Cd + Hg + Cr VI is less than 100 ppm

Japan (JHOSPA)

- The product is positively listed with its commercial name

Australian Standard AS 2070

- The product meets the purity requirements of the Australian Standard AS 2070. Eventually contained additive (s) is (are) listed on the Regulation (EU) No 10/2011.

- * Any contained additive (s) is (are) listed on the Regulation (EU) No 10/2011. However the preserving agent is not listed on the Regulation (EU) No 10/2011
- The product contains one or several additive (s) not listed on the Regulation (EU) No 10/2011

MERCOSUL FC Regulation Plastics

- The product meets the purity requirements by GMC/RES/2010/015.

Eventually contained additive (s) are listed on the positive lists GMC/RES/2007/032 or GMC/RES/2010/015

MERCOSUL Toys Regulation NM 300-3

- The product fulfils the heavy metals limits as laid down in MERCOSUL Toys Standard NM 300-3

**Regulation (EC) No 648/2004 on detergents
of 31 March 2004**

■¹ The product does not contain surfactants in terms of Regulation (EC) No. 648/2004 for detergents and therefore is not affected by the regulation.

■² The product contains surfactant(s) in terms of Regulation (EC) No. 648/2004 for detergents, which is (are) in compliance with the biodegradability criteria as laid down in this regulation.

**EU Cosmetic Directive 1223/2009 on cosmetic Products
annex IV List of colorants allowed in cosmetic products –
column Product type, body parts**

- 1 = No use restrictions
- 2 = Not to be used in eye products
- 3 = Not to be used in products applied to mucous membranes
- 4 = For rinse-off products only

**Japan: Colorants for Cosmetics and drugs regulated
by the Pharmaceutical Affairs Law.**

**Permitted use categories are determined by classification
into three Lists**

- List 1 – for application in all drugs and cosmetics
(including Lip/Oral, Eye Area, External and Rinse-off)
- List 2 – for application in cosmetics
(including Eye Area, External and Rinse-off)
- List 3 – for application in cosmetic intended not come
into contact with mucous membranes
(including Eye Area but no eyeliner, External and Rinse-off)

**USA: ASTM F 963-07 e1,
Table 1**

■ The product meets the purity criteria of ASTM 963-07 e1, Table 1

6 – Tables

TRADE NAMES

Colanyl[®], Cosmenyl[®], Duasyn[®],
Flexonyl[®], Flexoprint[®], Graphtol[®],
Hansa[®], Hostafine[®], Hostaperm[®],
Hostaprint[®], Hostasin[®], Hostasol[®],
Novoperm[®], Polysynthren[®],
PV Fast[®], Hostanol[®], Sanolin[®],
Savinyl[®], Solvaperm[®] and Viscofil[®]

Please note that all product information and data are based on the present state of our knowledge and experience and recognized test methods. No responsibility or liability can be assumed for factors lying outside our knowledge and control. It is the responsibility of all users to check that our products comply with the specific requirements of the intended application.

COLANYL

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
222634	COLANYL BLUE A2R 132	Pigment Blue 15:1	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
204924	COLANYL BLUE B2G 131	Pigment Blue 15:3	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
111218	COLANYL CARMINE FB 130	Pigment Red 5	12490	6410-41-9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
118340	COLANYL GREEN GG 131	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
107120	COLANYL OXIDE BLUE CO 100	Pigment Blue 28	77346	1345-16-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
104988	COLANYL RED E3B 130	Pigment Violet 19	73900	1047-16-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
187202	COLANYL RED FGR 131	Pigment Red 112	12370	6535-46-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
187155	COLANYL RED FGRG 130	Pigment Red 112	12370	6535-46-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
224892	COLANYL VIOLET RL 131	Pigment Violet 23	51319	6358-30-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
189173	COLANYL YELLOW 10G 132	Pigment Yellow 3	11710	6486-23-3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
211147	COLANYL YELLOW 2GXD 130	Pigment Yellow 74	11741	6358-31-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
205650	COLANYL YELLOW 5GX 130	Pigment Yellow 74	11741	6358-31-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
226830	COLANYL YELLOW FGL 132	Pigment Yellow 97	11767	12225-18-2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
211158	COLANYL YELLOW G 132	Pigment Yellow 1	11680	2512-29-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
222633	COLANYL YELLOW H3G 130	Pigment Yellow 154	11781	68134-22-5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
104929	COLANYL YELLOW HR 130*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
241305	COLANYL YELLOW HRD 131*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
196863	COLANYL BLUE A2R 500	Pigment Blue 15:1	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
187167	COLANYL BLUE B2G 500	Pigment Blue 15:3	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
196805	COLANYL GREEN GG 500	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
213718	COLANYL OXIDE BLUE COR 500	Pigment Blue 28	77346	1345-16-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
231400	COLANYL RED FGR 530	Pigment Red 112	12370	6535-46-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
176004	COLANYL RED FGRD 500	Pigment Red 112	12370	6535-46-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
215782	COLANYL RED D3GD 500	Pigment Red 254	56110	84632-65-5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
200970	COLANYL RED E3B 500	Pigment Violet 19	73900	1047-16-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
205546	COLANYL VIOLET RL 500	Pigment Violet 23	51319	6358-30-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
183363	COLANYL YELLOW 2GXD 500	Pigment Yellow 74	11741	6358-31-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
185946	COLANYL YELLOW 5GX 500	Pigment Yellow 74	11741	6358-31-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
212285	COLANYL YELLOW FGL 500	Pigment Yellow 97	11767	12225-18-2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
183360	COLANYL YELLOW G 500	Pigment Yellow 1	11680	2512-29-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
183303	COLANYL YELLOW H3G 500	Pigment Yellow 154	11781	68134-22-5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
212702	COLANYL YELLOW HRD 500*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
266833	COLANYL WHITE R 100	Pigment White 6	77891	13463-67-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COPY CHARGE, COSMENYL, COSMETIC, DUASYN, FAT

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
165560	COPY CHARGE N4P	-	-	-	<input type="checkbox"/>	■	■		<input type="checkbox"/>
213173	COPY CHARGE N5P-01 VP 2931	-	-	-	■	■	■		■
105298	COSMENYL BLACK R	Pigment Black 7	77266	1333-86-4	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
215195	COSMENYL BLUE A4R	Pigment Blue 15:1	74160	147-14-8	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
259590	COSMENYL BLUE A4R OC VP 5083	Pigment Blue 15:1	74160	147-14-8	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
102011	COSMENYL BLUE BLS GRAN.	Pigment Blue 15	74160	147-14-8	<input type="checkbox"/>	■	■	■	<input type="checkbox"/>
107159	COSMENYL CARMINE FB 01	Pigment Red 5	12490	6410-41-9	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
102017	COSMENYL GREEN 2GLS GRAN.	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/>	■	■	■	<input type="checkbox"/>
105295	COSMENYL GREEN GG	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
270845	COSMENYL GREEN GG OC VP 5148	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
227802	COSMENYL OXIDE YELLOW R	Pigment Yellow 42	77492	51274-0-1	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
102087	COSMENYL RED BLS GRAN.	Pigment Red 5	12490	6410-41-9	<input type="checkbox"/>	■	■	■	<input type="checkbox"/>
107162	COSMENYL VIOLET RL	Pigment Violet 23	51319	6358-30-1	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
107163	COSMENYL YELLOW 10G	Pigment Yellow 3	11710	6486-23-3	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
187963	COSMENYL YELLOW G 30	Pigment Yellow 1	11680	2512-29-0	<input type="checkbox"/> *	■	■	<input type="checkbox"/>	<input type="checkbox"/> *
102003	COSMENYL YELLOW GLS GRAN.	Pigment Yellow 1	11680	2512-29-0	<input type="checkbox"/>	■	■	<input type="checkbox"/>	<input type="checkbox"/>
216192	COSMETIC PINK RC 01	Pigment Red 181/ Vat Red 1/D&C Red 30	73360	2379-74-0	■	■	■	■	■
242368	COSMETIC RED 3B	Pigment Red 57:1	15850:1	5281-04-09	■	■	■	■	■
213630	DUASYN ACID BLUE AE 03	Acid Blue 9	42090	3844-45-9	<input type="checkbox"/>	■	■	■	<input type="checkbox"/>
107170	DUASYN ACID BLUE AE LIQUID	Acid Blue 9	42090	3844-45-9	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
176214	DUASYN ACID BLUE AE-SF 30 LIQUID	Acid Blue 9	42090	3844-45-9	<input type="checkbox"/>	■	■	<input type="checkbox"/>	<input type="checkbox"/>
213363	DUASYN ACID YELLOW XX-SF	Acid Yellow 23	19140	1934-21-0	■	■	■		■
108191	DUASYN BLACK A-RG	Solvent Black 27	-	-	■	■	■		■
107181	DUASYN BRILLIANT RED F3B-SF LIQUID	Reactive Red 180	181055	85586-40-9	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
108368	DUASYN INK BLUE SLK	Acid Blue 93	42780	28983-56-4	■	■	■	■	■
136353	DUASYN YELLOW 3GF-SF LIQUID	Direct Yellow 132	-	-	<input type="checkbox"/> *	■	■	■	<input type="checkbox"/> *
197434	DUASYNJET CYAN FRL-SF LIQUID	Direct Blue 199	74190	90295-11-7	<input type="checkbox"/> *	■	■		<input type="checkbox"/> *
104922	FAT YELLOW 3G	Solvent Yellow 16	12700	4314-14-1	■	■	■		■

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
B	■	■		◇		■		□					
A	■	■		◇		■		■					■
				★		■		□*			■ ²	1	■
				★		■		□*			■ ²	1	3
				★		■		□*			■ ²	1	3
				★		■		□			■ ¹	1	3
				★		■		□*			■ ²	1	■
				★		■		□			■ ¹	2	■
				★		■		□*			■ ²	2	■
				★		■		□*			■ ²	2	■
				★		■		□*			■ ¹	1	1
				★		■		□			■ ¹	1	■
				★		■		□*			■ ²	4	■
				★		■		□*			■ ²	3	■
				★		■		□*			■ ²	3	3
				★		■		□			■ ¹	3	3
			■	★	■	■		■	■	■		1	2
				★		■		■	■	■		1	■
				◇		■		□			■ ²		■
				◇		■		□*			■ ¹		■
				◇		■		□					■
				◇		■		■					■
				◇		■		■					■
				◇		■		□*			■ ¹		■
				◇		■		■			■ ¹		■
				◇		■		□*					■
				◇		■		□*					■
				◇		■		■	■	■			■

FLEXOPRINT, FLEXONYL

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
161635	FLEXOPRINT YELLOW HR*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
137792	FLEXOPRINT BLACK CB 01	Pigment Black 7	77266	1333-86-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
107214	FLEXONYL BLACK A-CB	Pigment Black 7	77266	1333-86-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
103489	FLEXONYL BLUE WF 153	Pigment Blue 15:3	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
230731	FLEXONYL CARMINE SP-FBB	Pigment Red 146	12485	5280-68-2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
237346	FLEXONYL ORANGE SP-G*	Pigment Orange 13	21110	3520-72-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
142171	FLEXONYL ORANGE WF 131*	Pigment Orange 13	21100	3520-72-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
230732	FLEXONYL RED SP-FGR	Pigment Red 112	12370	6535-46-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
161080	FLEXONYL RUBINE A-F6B 30	Pigment Red 184	12487	99402-80-9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
111460	FLEXONYL RUBINE WF 571	Pigment Red 57:1	15850:1	5281-04-9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
169800	FLEXONYL WHITE R 130	Pigment White 6	77891	13463-67-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
208285	FLEXONYL WHITE RL 130 VP 3070	Pigment White 6	77891	13463-67-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
118394	FLEXONYL WHITE RS	Pigment White 6	77891	13463-67-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
241621	FLEXONYL YELLOW SP-DGR*	Pigment Yellow 126	21101	90268-23-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
142176	FLEXONYL YELLOW WF 074	Pigment Yellow 74	11741	6358-31-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
142174	FLEXONYL YELLOW WF 141*	Pigment Yellow 14	21095	5468-75-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law	ASTM 963-07 e1, Table 1
A	■	■		◆		■		□						■
A	■	■		◆		■		□						■
				◆		■								■
				❖		■		□						■
				◆		■		□			■ ²			■
				❖		■		□			■ ²			■
				◆		■		□						■
				◆		■		□			■ ²			■
				◆		■		□						■
				◆		■		□						■
				◆		■		□						■
				◆		■		□						■
				◆		■		□						■
				◆		■		□			■ ²			■
				◆		■		□						■
				◆		■		□						■

GRAPHTOL, HANSA

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
153603	GRAPHTOL BLUE AN	Pigment Blue 15	74160	147-14-8	■	■	■	■	■
104893	GRAPHTOL BORDEAUX HF3R	Pigment Violet 32	12517	12225-08-0	□	■	■	■	□
104916	GRAPHTOL CARMINE HF3C	Pigment Red 176	12515	12225-06-8	■	■	■	■	■
105527	GRAPHTOL CARMINE HF4C	Pigment Red 185	12516	51920-12-8	■	■	■	■	■
103469	GRAPHTOL ORANGE GPS*	Pigment Orange 13	21110	3520-72-7	□	■	■		□
181556	GRAPHTOL ORANGE RL*	Pigment Orange 34	21115	15793-73-4	■	■	■		■
111429	GRAPHTOL RED 2BN	Pigment Red 262	-	-	■	■	■	■	■
221652	GRAPHTOL RED F3RK 70	Pigment Red 170	12475	2786-76-7	■	■	■	■	■
217716	GRAPHTOL RED F5RK	Pigment Red 170	12475	2786-76-7	□	■	■	■	□
104897	GRAPHTOL RED HF2B	Pigment Red 208	12514	31778-10-6	■	■	■	■	■
107506	GRAPHTOL RED HFG	Pigment Orange 38	12367	12236-64-5	■	■	■	■	■
181421	GRAPHTOL RED LG	Pigment Red 53:1	15585:1	5160-02-1	■	■	■	■	■
219306	GRAPHTOL RUBINE L4B	Pigment Red 57:1	15850:1	5281-04-9	□	■	■	■	□
104890	GRAPHTOL YELLOW GG*	Pigment Yellow 17	21105	4531-49-1	■	□	■	□	■
107515	GRAPHTOL YELLOW GR*	Pigment Yellow 13	21100	5102-83-0	■	■	■	■	■
103300	GRAPHTOL YELLOW 3GP	Pigment Yellow 155	200310	68516-73-4	■	■	■	■	■
111720	GRAPHTOL YELLOW H2R	Pigment Yellow 139	56298	36888-99-0	■	■	■	■	■
104970	HANSA BRILLIANT YELLOW 2GX 70	Pigment Yellow 74	11741	6358-31-2	□	□	■	□	□
167583	HANSA BRILLIANT YELLOW 2GX 70-S	Pigment Yellow 74	11741	6358-31-2	□	□	■		□
104968	HANSA BRILLIANT YELLOW 4GX	Pigment Yellow 73	11738	13515-40-7	□	□	■		□
107247	HANSA BRILLIANT YELLOW 5GX	Pigment Yellow 74	11741	6358-31-2	□	□	■	□	□
107250	HANSA BRILLIANT YELLOW 5GX 03	Pigment Yellow 74	11741	6358-31-2	■	□	■		■
107251	HANSA BRILLIANT YELLOW 5GX-W	Pigment Yellow 74	11741	6358-31-2	□	□	■		□
107254	HANSA RED 3B	Pigment Red 3	12120	2425-85-6	■	■	■	■	■
104882	HANSA RED B	Pigment Red 3	12120	2425-85-6	□	■	■	■	□
107255	HANSA RED GG	Pigment Orange 5	12075	3468-63-1	□	■	■	■	□
108162	HANSA RED R	Pigment Red 4	12085	2814-77-9	■	■	■	■	■
200064	HANSA SCARLET RNC	Pigment Red 3	12120	2425-85-6	■	■	■	■	■
104885	HANSA YELLOW 10G	Pigment Yellow 3	11710	6486-23-3	■	■	■	■	■
104915	HANSA YELLOW 10G 41 GRAN.	Pigment Yellow 3	11710	6486-23-3	□	■	■	■	□
218460	HANSA YELLOW 5GX01	Pigment Yellow 74	11741	6358-31-2	■	□	■		■
264311	HANSA YELLOW 5GXB	Pigment Yellow 74	11741	6358-31-2	□	□	■		□
107257	HANSA YELLOW G 02	Pigment Yellow 1	11680	2512-29-0	■	■	■	■	■
107257	HANSA YELLOW G 02 GRAN.	Pigment Yellow 1	11680	2512-29-0	■	■	■		■

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
A			■	❖	■	■		■	■	■			■
A				◆		■	■	□					■
B				◆		■	■	■					■
B				◆		■	■	■					■
A				◆		■		□					■
B				◆		■		■	■	■			■
				◆		■	■	■	■	■			■
A			●	◆		■		■	■	■			■
A				◆		■		□					■
A			■	◆		■	■	■	■	■			■
B				◆		■	■	■	■	■			■
B				❖		■		■	■	■			■
A				◆		■		□					■
A				◆		■		■	■	■			■
A				◆		■		■					■
A			●	◆		■	■	■	■	■			■
A			■	◆		■	■	■	■	■			■
B	■	■		❖		■		□					■
B		■		❖		■		□					■
B		■		◆		■		□					■
B	■	■		◆		■		■					■
B	■	■		◆		■		□					■
A	■	■		◆		■		■	■	■			■
A	■	■		◆		■		□					■
A	■	■		◆		■		■	■	■			■
A	■	■	■	◆		■		■	■	■			■
		■		◆		■		□					■
B	■	■		◆		■		■					■
B	■	■		◆		■		□					■
B	■	■	■	◆		■		■					■
B	■	■	■	◆		■		■					■

HOSTACOPY, HOSTACRYL, HOSTAFINE, HOSTAJET

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
139299	HOSTACOPY BG-C 101	Pigment Blue 15:3	74160	147-14-8		■	■		
118407	HOSTACOPY E 02-M101	Pigment Red 122	73915	980-26-7		■	■		
212327	HOSTACOPY FBB02-M101 VP 3100	Pigment Red 146	12485	5280-68-2		■	■		
139295	HOSTACOPY HG-Y 101	Pigment Yellow 180	21290	77804-81-0		■	■		
213176	HOSTACRYL BROWN HFR	Pigment Brown 25	12510	6992-11-6	□	■	■		□
209494	HOSTACRYL GREEN GNX	Pigment Green 7	74260	1328-53-6	□	■	■		□
211186	HOSTAFINE BLACK T 30	Pigment Black 7	77266	1333-86-4	□	■	■	■	□
219508	HOSTAFINE BLACK TS 30	Pigment Black 7	77266	1333-86-4	□	■	■	□	□
105098	HOSTAFINE BLUE B2G	Pigment Blue 15:3	74160	147-14-8	□	■	■	■	□
105121	HOSTAFINE GREEN GN	Pigment Green 7	74260	1328-53-6	□	■	■	■	□
182574	HOSTAFINE MAGENTA E	Pigment Red 122	73915	980-26-7	□	■	■	■	□
166281	HOSTAFINE RED FGR	Pigment Red 112	12370	6535-46-2	□	□	■	□	□
107262	HOSTAFINE RED HF3S	Pigment Red 188	12467	61847-48-1	□	□	■	□	□
146561	HOSTAFINE RED P2GL	Pigment Red 179	71130	5521-31-3	□	■	■	■	□
104999	HOSTAFINE RUBINE F6B	Pigment Red 184	12487	99402-80-9	□	■	■	■	□
166280	HOSTAFINE VIOLET RL	Pigment Violet 23	51319	6358-30-1	□	■	■	■	□
105109	HOSTAFINE YELLOW GR*	Pigment Yellow 13	21100	5102-83-0	□	■	■	■	□
107263	HOSTAFINE YELLOW HR*	Pigment Yellow 83	21108	5567-15-7	□	■	■	■	□
188993	HOSTAJET CYAN BG-PT	Pigment Blue 15:3	74160	147-14-8		■	■		
229947	HOSTAJET MAGENTA E5B-PT VP 3565	Pigment Violet 19	73900	1047-16-1		■	■		
188989	HOSTAJET MAGENTA E-PT	Pigment Red 122	73915	980-26-7		■	■		
188982	HOSTAJET YELLOW 4G-PT VP 2669	Pigment Yellow 155	200310	68516-73-4		■	■		

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
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HOSTAPERM

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
115058	HOSTAPERM BLUE A2R	Pigment Blue 15:1	74160	147-14-8	■	■	■	■	■
153605	HOSTAPERM BLUE A4R	Pigment Blue 15:1	74160	147-14-8	■	■	■	■	■
107264	HOSTAPERM BLUE AFL	Pigment Blue 15:2	74160	147-14-8	■	■	■	■	■
104942	HOSTAPERM BLUE B2G	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
153600	HOSTAPERM BLUE B2G-L	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
153601	HOSTAPERM BLUE B4G	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
115058	HOSTAPERM BLUE BG	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
118349	HOSTAPERM BLUE BT-617-D	Pigment Blue 15:4	74160	147-14-8	□	■	■	■	□
118350	HOSTAPERM BLUE BT-627-D	Pigment Blue 15:2	74160	147-14-8	□	■	■	■	□
111221	HOSTAPERM BLUE BT-728-D	Pigment Blue 15:1	74160	147-14-8	□	■	■	■	□
107188	HOSTAPERM BLUE BT-729-D	Pigment Blue 15:2	74160	147-14-8	□	■	■	■	□
104981	HOSTAPERM BROWN HFR 01	Pigment Brown 25	12510	6992-11-6	■	■	■	■	■
105070	HOSTAPERM GREEN GG 01	Pigment Green 7	74260	1328-53-6	■	■	■	■	■
103278	HOSTAPERM GREEN GLS 01	Pigment Green 7	74260	1328-53-6	■	■	■	■	■
105775	HOSTAPERM GREEN GNX	Pigment Green 7	74260	1328-53-6	■	■	■	■	■
206985	HOSTAPERM GREEN GNX-C	Pigment Green 7	74260	1328-53-6	■	■	■	■	■
104963	HOSTAPERM ORANGE GR	Pigment Orange 43	71105	4424-06-0	■	■	■	■	■
104952	HOSTAPERM PINK E	Pigment Red 122	73915	980-26-7	■	■	■	■	■
104982	HOSTAPERM PINK E 02	Pigment Red 122	73915	980-26-7	■	■	■	■	■
212159	HOSTAPERM PINK E2Y	Pigment Red 122	73915	980-26-7	□	■	■	■	□
122089	HOSTAPERM PINK E-WD	Pigment Red 122	73915	980-26-7	■	■	■	■	■
197163	HOSTAPERM VIOLET BL 01	Pigment Violet 23	51319	6358-30-1	■	■	■	■	■
207687	HOSTAPERM RED D3G 70	Pigment Red 254	56110	84632-65-5	■	■	■	■	■
105136	HOSTAPERM RED E2B 70	Pigment Violet 19	73900	1047-16-1	□	■	■	■	□
104947	HOSTAPERM RED E3B	Pigment Violet 19	73900	1047-16-1	■	■	■	□	■
104960	HOSTAPERM RED E5B 02	Pigment Violet 19	73900	1047-16-1	■	■	■	□	■
104954	HOSTAPERM RED VIOLET ER 02	Pigment Violet 19	73900	1047-16-1	■	■	■	□	■
107272	HOSTAPERM SCARLET GO	Pigment Red 168	59300	4378-61-4	■	■	■	■	■
104962	HOSTAPERM SCARLET GO TRANSP.	Pigment Red 168	59300	4378-61-4	■	■	■	■	■
107273	HOSTAPERM VIOLET P-RL	Pigment Violet 23	51319	6358-30-1	■	■	■	■	■
107250	HOSTAPERM VIOLET RL 02	Pigment Violet 23	51319	6358-30-1	□	■	■	■	□
105136	HOSTAPERM VIOLET RL SPEC.	Pigment Violet 23	51319	6358-30-1	□	■	■	■	□
104899	HOSTAPERM YELLOW H3G	Pigment Yellow 154	11781	68134-22-5	■	■	■	■	■
116674	HOSTAPERM YELLOW H4G	Pigment Yellow 151	13980	31837-42-0	■	■	■	■	■
213632	HOSTAPERM YELLOW H4G 70	Pigment Yellow 151	13980	31837-42-0	■	■	■	■	■
105095	HOSTAPERM YELLOW H6G	Pigment Yellow 175	11784	35636-63-6	■	■	■	■	■

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
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HOSTAPRINT

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
155434	HOSTAPRINT BLACK L 32	Pigment Black 7	77266	1333-86-4	■	■	■		
108350	HOSTAPRINT BLUE A2R 32	Pigment Blue 15:1	74160	147-14-8	■	■	■		■
108351	HOSTAPRINT BLUE B2G 32	Pigment Blue 15:3	74160	147-14-8	■	■	■		■
108353	HOSTAPRINT BORDEAUX HF3R 32	Pigment Violet 32	12517	12225-08-0	□	■	■		□
108353	HOSTAPRINT BROWN HFR 32	Pigment Brown 25	12510	6992-11-6	■	■	■		■
152191	HOSTAPRINT BROWN RL 32	Pigment Brown 41	-	-	■	■	■		■
108354	HOSTAPRINT CARMINE HF4C 32	Pigment Red 185	12516	51920-12-8	■	■	■		■
108358	HOSTAPRINT GREEN GG 32	Pigment Green 7	74260	1328-53-6	■	■	■		■
166306	HOSTAPRINT ORANGE H4GL 32 VP 2510**	Pigment Orange 72	211095	78245-94-0	■	■	■		■
122221	HOSTAPRINT PINK E 32	Pigment Red 122	73915	980-26-7	■	■	■		■
108359	HOSTAPRINT RED B 32	Pigment Red 149	71137	4948-15-6	■	■	■		■
166303	HOSTAPRINT RED BNP 32 VP 2513	Pigment Red 214	200660	40618-31-3	■	■	■		■
216080	HOSTAPRINT RED D3G 32 VP 3223	Pigment Red 254	56110	84632-65-5	■	■	■		■
118304	HOSTAPRINT RED E5B 32	Pigment Violet 19	73900	1047-16-1	■	■	■		■
108361	HOSTAPRINT RED HF2B 32	Pigment Red 208	12514	31778-10-6	■	■	■		■
108360	HOSTAPRINT RED HFG 32	Pigment Orange 38	12367	12236-64-5	■	■	■		■
108362	HOSTAPRINT VIOLET RL 32	Pigment Violet 23	51319	6358-30-1	■	■	■		■
108355	HOSTAPRINT YELLOW GG 32*	Pigment Yellow 17	21105	4531-49-1	■	□	■		■
236011	HOSTAPRINT YELLOW H2R 32	Pigment Yellow 139	56298	36888-99-0	■	■	■		■
122220	HOSTAPRINT YELLOW H4G 32	Pigment Yellow 151	13980	31837-42-0	■	■	■		■
108356	HOSTAPRINT YELLOW HG 32	Pigment Yellow 180	21290	77804-81-0	■	■	■		■
108357	HOSTAPRINT YELLOW HGR 32	Pigment Yellow 191	18795	129423-54-7	■	■	■		■
107293	HOSTAPRINT YELLOW HR 32*	Pigment Yellow 83	21108	5567-15-7	■	■	■		■

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HOSTASIN, HOSTASOL, INK JET

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
157725	HOSTASIN BLUE A2R 30	Pigment Blue 15:1	74160	147-14-8	<input type="checkbox"/>	■	■		<input type="checkbox"/>
233137	HOSTASIN BLUE AN 30 VP 3743	Pigment Blue 15	74160	147-14-8	<input type="checkbox"/>	■	■		<input type="checkbox"/>
157728	HOSTASIN GREEN GG 30	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/>	■	■		<input type="checkbox"/>
157729	HOSTASIN ORANGE G 30*	Pigment Orange 13	21110	3520-72-7	<input type="checkbox"/>	■	■		<input type="checkbox"/>
157841	HOSTASIN RED HF2B 30	Pigment Red 208	12514	31778-10-6	<input type="checkbox"/>	■	■		<input type="checkbox"/>
157726	HOSTASIN YELLOW GR 30*	Pigment Yellow 13	21100	5102-83-0	<input type="checkbox"/>	■	■		<input type="checkbox"/>
157727	HOSTASIN YELLOW HR 30*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	■	■		<input type="checkbox"/>
104956	HOSTASOL RED 5B	Vat Red 41	73300	522-75-8	■	■	■		■
104974	HOSTASOL YELLOW 3G	Solvent Yellow 98	56238	12671-74-8	■	■	■		■
230147	INK JET CYAN BG 10	Pigment Blue 15:3	74160	147-14-8	■	■	■		■
181410	INK JET MAGENTA E02	Pigment Red 122	73915	980-26-7	■	■	■		■
206153	INK JET MAGENTA E5B 02	Pigment Violet 19	73900	1047-16-1	■	■	■		■
242759	INK JET MAGENTA E7B VP 3958	-	-	-	■	■	■		■
167652	INK JET YELLOW 4G	Pigment Yellow 155	200310	68516-73-4	■	■	■		■
238736	INK JET YELLOW 4GC VP 3854	Pigment Yellow 155	200310	68516-73-4	■	■	■		■
105067	INK JET YELLOW H2G	Pigment Yellow 120	11783	29920-31-8	<input type="checkbox"/>	■	■		<input type="checkbox"/>
237721	INK JET YELLOW H4G VP 3853	Pigment Yellow 151	13980	31837-42-0	■	■	■		■

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
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NOVOPERM

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
104892	NOVOPERM BORDEAUX HF3R	Pigment Violet 32	12517	12225-08-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
107438	NOVOPERM CARMINE HF3C	Pigment Red 176	12515	12225-06-8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
104894	NOVOPERM CARMINE HF4C	Pigment Red 185	12516	51920-12-8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
105064	NOVOPERM ORANGE H5G 70	Pigment Orange 62	11775	52846-56-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
104984	NOVOPERM ORANGE HL	Pigment Orange 36	11780	12236-62-3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
104950	NOVOPERM ORANGE HL 70	Pigment Orange 36	11780	12236-62-3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
104971	NOVOPERM RED F2RK 70	Pigment Red 170	12475	2786-76-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
105528	NOVOPERM RED F3RK 70	Pigment Red 170	12475	2786-76-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
216357	NOVOPERM RED F5RK	Pigment Red 170	12475	2786-76-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
104880	NOVOPERM RED HF2B 01	Pigment Red 208	12514	31778-10-6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
202382	NOVOPERM RED HF3S	Pigment Red 188	12467	61847-48-1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
182673	NOVOPERM RED HF3S 70	Pigment Red 188	12467	61847-48-1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
105007	NOVOPERM RED HF4B	Pigment Red 187	12486	59487-23-9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
107440	NOVOPERM RED HFG	Pigment Orange 38	12367	12236-64-5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
187853	NOVOPERM YELLOW 4G 01	Pigment Yellow 155	200310	68516-73-4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
187854	NOVOPERM YELLOW 5GD 71	Pigment Yellow 155	200310	68516-73-4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
107442	NOVOPERM YELLOW F2G	Pigment Yellow 194	11785	82199-12-0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
105031	NOVOPERM YELLOW FGL	Pigment Yellow 97	11767	12225-18-2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
105067	NOVOPERM YELLOW H2G	Pigment Yellow 120	11783	29920-31-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
194524	NOVOPERM YELLOW H3R	Pigment Yellow 181	11777	74441-05-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
106582	NOVOPERM YELLOW HR 02*	Pigment Yellow 83	21108	5567-15-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
111249	NOVOPERM YELLOW HR 04*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
116673	NOVOPERM YELLOW HR 70*	Pigment Yellow 83	21108	5567-15-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
105125	NOVOPERM YELLOW M2R 70	Pigment Yellow 139	56298	36888-99-0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
107445	NOVOPERM YELLOW P-HG	Pigment Yellow 180	21290	77804-81-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>
213223	NOVOPERM YELLOW P-HRE*	Pigment Yellow 83	21108	5567-15-7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
118380	NOVOPERM YELLOW P-M3R	Pigment Yellow 139	56298	36888-99-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
A	■	■		◆		■		□					■
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NOVOTEX, PERMANENT

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
240815	NOVOTEX CARMINE FBB	Pigment Red 146	12485	5280-68-2		■	■	■	
188734	NOVOTEX RED ARCY	Pigment Red 48:2	15865:2	7023-61-2		■	■		
190555	NOVOTEX RED F4RK	Pigment Red 170	12475	2786-76-7		■	■	■	
240809	NOVOTEX YELLOW HR 02*	Pigment Yellow 83	21108	5567-15-7		■	■		
104887	PERMANENT BORDEAUX FRR	Pigment Red 12	12385	6410-32-8	■	□	■	■	■
104912	PERMANENT CARMINE FB 01	Pigment Red 5	12490	6410-41-9	■	■	■	■	■
240808	PERMANENT CARMINE FBB 02	Pigment Red 146	12485	5280-68-2	□	■	■	■	□
240811	PERMANENT ORANGE G*	Pigment Orange 13	21110	3520-72-7	□	■	■	■	□
240184	PERMANENT ORANGE RL 01*	Pigment Orange 34	21115	15793-73-4	■	■	■		■
182674	PERMANENT ORANGE RL 70*	Pigment Orange 34	21115	15793-73-4	■	■	■	■	■
105526	PERMANENT RED FGR	Pigment Red 112	12370	6535-46-2	■	□	■	■	■
107456	PERMANENT RED FGR 02	Pigment Red 112	12370	6535-46-2	■	□	■		■
107457	PERMANENT RED FGR 03	Pigment Red 112	12370	6535-46-2	■	□	■		■
104972	PERMANENT RED FGR 70	Pigment Red 112	12370	6535-46-2	□	□	■		□
182690	PERMANENT RED FRLL 01	Pigment Red 9	12460	6410-38-4	□	□	■	■	□
107460	PERMANENT RED FRR	Pigment Red 2	12310	6041-94-7	□	■	■	■	□
107461	PERMANENT RED P-F7RK	Pigment Red 266	12474	36968-27-1	□	□	■		□
107462	PERMANENT RED P-FK	Pigment Red 210	12477	61932-63-6	■	□	■		■
104895	PERMANENT RUBINE F6B	Pigment Red 184	12487	99402-80-9	■	■	■		■
208822	PERMANENT RUBINE F6B 01	Pigment Red 184	12487	99402-80-9	■	■	■		■
107464	PERMANENT RUBINE P-F7B	Pigment Red 184	12487	99402-80-9	□	■	■		□
153053	PERMANENT RUBINE P-L7B 01	Pigment Red 57:1	15850:1	5281-04-9	□	■	■		□
107465	PERMANENT YELLOW DGR*	Pigment Yellow 126	21101	90268-23-8	■	■	■	□	■
240737	PERMANENT YELLOW DHG*	Pigment Yellow 12	21090	6358-85-6	■	■	■	□	■
107472	PERMANENT YELLOW GG 02*	Pigment Yellow 17	21105	4531-49-1	□	□	■		□
107474	PERMANENT YELLOW GR 01*	Pigment Yellow 13	21100	5102-83-0	□	■	■	■	□
189171	PERMANENT YELLOW GR 04*	Pigment Yellow 13	21100	5102-83-0	□	■	■		□
171270	PERMANENT YELLOW GR*	Pigment Yellow 13	21100	5102-83-0	■	■	■		■
204394	PERMANENT YELLOW GRS 80*	Pigment Yellow 174	21098	78952-72-4	□	□	■		□
107476	PERMANENT YELLOW GRX 83*	Pigment Yellow 176	21103	90268-24-9	□	■	■		□
141020	PERMANENT YELLOW GRX 86*	Pigment Yellow 176	21103	90268-24-9	□	■	■	■	□
149660	PERMANENT YELLOW P-G*	Pigment Yellow 14	21095	5468-75-7	□	□	■	□	□
111265	PERMANENT YELLOW P-GRL 06*	Pigment Yellow 13	21100	5102-83-0	□	■	■		□
209947	PERMANENT YELLOW P-GRL 07*	Pigment Yellow 13	21100	5102-83-0	□	■	■		□
232577	PERMANENT YELLOW P-GRL 100*	Pigment Yellow 174	21098	78952-72-4	□	□	■		□

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
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POLYSYNTHREN, PV FAST

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
103480	POLYSYNTHREN BLUE RLS	Solvent Blue 45	-	23552-74-1	■	■	■		■
133649	POLYSYNTHREN BROWN 3RL	Pigment Orange 70	-	-	■	■	■		■
105119	POLYSYNTHREN BROWN R	Solvent Brown 53	48525	64696-98-6	■	■	■		■
214035	POLYSYNTHREN RED GFP	Solvent Red 135	564120	20749-68-2	■	■	■		■
107486	POLYSYNTHREN VIOLET G	Solvent Violet 49	48520	205057-15-4	■	■	■		■
107487	POLYSYNTHREN YELLOW GG	Solvent Yellow 133	48580	51202-86-9	■	■	■		■
174486	POLYSYNTHREN YELLOW NG	Pigment Yellow 147	60645	4118-16-5	■	■	■		■
103518	POLYSYNTHREN YELLOW RL	Pigment Yellow 192	507300	56279-27-7	■	■	■		■
104943	PV FAST BLUE 2GLSP	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
104935	PV FAST BLUE A2R	Pigment Blue 15:1	74160	147-14-8	■	■	■	■	■
153604	PV FAST BLUE A4R	Pigment Blue 15:1	74160	147-14-8	■	■	■	■	■
106313	PV FAST BLUE BG	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
104884	PV FAST BROWN HFR	Pigment Brown 25	12510	6992-11-6	■	■	■		■
103477	PV FAST BROWN RL	Pigment Brown 41	-	-	■	■	■		■
105128	PV FAST GREEN GNX	Pigment Green 7	74260	1328-53-6	■	■	■	■	■
103350	PV FAST ORANGE 6RL	Pigment Orange 68	486150	42844-93-9	■	■	■		■
104964	PV FAST ORANGE GRL	Pigment Orange 43	71105	4424-06-0	■	■	■		■
209064	PV FAST ORANGE H2GL VP 3044	Pigment Orange 64	-	-	□	■	■		□
106616	PV FAST ORANGE H4GL 01**	Pigment Orange 72	211095	78245-94-0	■	■	■		■
107491	PV FAST PINK E	Pigment Red 122	73915	980-26-7	■	■	■		■
104953	PV FAST PINK E 01	Pigment Red 122	73915	980-26-7	■	■	■		■
105096	PV FAST RED 3B	Pigment Red 144	20735	5280-78-4	■	■	■		■
239731	PV FAST RED B	Pigment Red 149	71137	4948-15-6	■	■	■		■
103281	PV FAST RED BNP	Pigment Red 214	200660	40618-31-3	■	■	■		■
207688	PV FAST RED D3G	Pigment Red 254	56110	84632-65-5	■	■	■		■
105052	PV FAST RED E3B	Pigment Violet 19	73900	1047-16-1	■	■	■		■
248292	PV FAST RED E4G	Pigment Violet 19	73900	1047-16-1	■	■	■		■
104959	PV FAST RED E5B	Pigment Violet 19	73900	1047-16-1	■	■	■		■
107505	PV FAST RED HB	Pigment Red 247	15915	43035-18-3	■	■	■		■
104998	PV FAST RED HF4B	Pigment Red 187	12486	59487-23-9	■	■	■		■

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
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PV FAST, HOSTANOL

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
103279	PV FAST VIOLET BLP	Pigment Violet 23	51319	6358-30-1	■	■	■		■
107494	PV FAST VIOLET ER	Pigment Violet 19	73900	1047-16-1	■	■	■		■
104951	PV FAST VIOLET RL	Pigment Violet 23	51319	6358-30-1	■	■	■		■
107496	PV FAST YELLOW H2G	Pigment Yellow 120	11783	29920-31-8	□	■	■		□
182077	PV FAST YELLOW H2GR	Pigment Yellow 191	18795	129423-54-7	■	■	■		■
104917	PV FAST YELLOW H3R	Pigment Yellow 181	11777	74441-05-7	■	■	■		■
232814	PV FAST YELLOW H4G	Pigment Yellow 151	13980	31837-42-0	■	■	■		■
167585	PV FAST YELLOW H9G VP 2430	Pigment Yellow 214	-	-	■	■	■		■
104918	PV FAST YELLOW HG	Pigment Yellow 180	21290	77804-81-0	■	■	■		■
183981	PV FAST YELLOW HG 01	Pigment Yellow 180	21290	77804-81-0	■	■	■		■
107497	PV FAST YELLOW HGR	Pigment Yellow 191	18795	129423-54-7	■	■	■		■
107498	PV FAST YELLOW HR 02*	Pigment Yellow 83	21108	5567-15-7	■	■	■		■
154351	HOSTANOL HW 30 BLACK R	Pigment Black 7	77266	1333-86-4	■	■	■	■	■
154340	HOSTANOL HW 30 BLUE B2G	Pigment Blue 15:3	74160	147-14-8	■	■	■	■	■
154342	HOSTANOL HW 30 BROWN HFR	Pigment Brown 25	12510	6992-11-6	■	■	■	■	■
154348	HOSTANOL HW 30 RED F5RK	Pigment Red 170	12475	2786-76-7	□	■	■	■	□
154350	HOSTANOL HW 30 RED HF2B	Pigment Red 208	12514	31778-10-6	■	■	■		■
154353	HOSTANOL HW 30 WHITE T	Pigment White 6	77891	13463-67-7	■	■	■		■
154345	HOSTANOL HW 30 YELLOW HR*	Pigment Yellow 83	21108	5567-15-7	■	■	■	■	■

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law	ASTM 963-07 e1, Table 1
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SANOLIN

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
129571	SANOLIN BLUE AE 90	Acid Blue 9	42090	3844-45-9	■	■	■	■	■
154640	SANOLIN BLUE EHRL	Acid Blue 182	-	12219-26-0		■	■	■	
152374	SANOLIN BLUE EHRL LIQ.	Acid Blue 182	-	12219-26-0		■	■	■	
159526	SANOLIN BLUE NBL	Acid Blue 80	61585	4474-24-2		■	■	■	
200164	SANOLIN CYAN FRL10 LIQ.	Direct Blue 199	74190	90295-11-7		■	■	■	
186656	SANOLIN FAST TURQUOISE GLL	Direct Blue 86	74180	1330-38-7		■	■	■	
159670	SANOLIN GREEN 6GLN	Acid Green 81	-	12234-89-8		■	■	■	
188283	SANOLIN GREEN R-3GL	Reactive Green 12	-	12225-80-8		■	■	■	
238538	SANOLIN GREEN R-3GL LIQ.	Reactive Green 12	-	12225-80-8		■	■	■	
111135	SANOLIN ORANGE RGL 90	Food Yellow 3	15985	2783-94-0	■	■	■	■	■
203322	SANOLIN PATENT BLUE GRAN.	Food Blue 5:2	42051:2	20262-76-4	■	■	■	■	■
107593	SANOLIN PATENT BLUE V85 01	Food Blue 5:2	42051:2	20262-76-4	■	■	■	■	■
107590	SANOLIN PONCEAU 4RC 82	Acid Red 18	16255	2611-82-7	■	■	■	■	■
108193	SANOLIN QUINOLINE YELLOW 70	Acid Yellow 3	47005	84924-83-4	■	■	■	■	■
159522	SANOLIN RED NBG	Acid Red 249	18134	6416-66-6		■	■	■	
202922	SANOLIN RED N-6B	Acid Violet 54	-	11097-74-8		■	■	■	
198846	SANOLIN RHODAMINE B02	Acid Red 52	45100	3520-42-1		■	■	■	
107594	SANOLIN TARTRAZINE X 90	Acid Yellow 23	19140	1934-21-0	■	■	■	■	■
266833	SANOLIN TARZTRAZIN YELLOW LIQ	Acid Yellow 23	19140	1934-21-0		■	■	■	
159527	SANOLIN TURQUOISE BLUE FBL	Direct Blue 199	74190	12222-04-7		■	■	■	
193340	SANOLIN VIOLET AS-E2R LIQ.	Acid Violet 126	-	-		■	■	■	
219547	SANOLIN VIOLET AS-FBL LIQ.	Acid Violet 48	-	12220-51-8		■	■	■	
240870	SANOLIN VIOLET AS-SP LIQ.	Direct Violet 66	29120	6798-03-04		■	■	■	
159524	SANOLIN VIOLET E2R	Acid Violet 126	-	-		■	■	■	
241637	SANOLIN YELLOW BG 30	Direct Yellow 28	19555	8005-72-9		■	■	■	
186657	SANOLIN YELLOW E-2GL	Acid Yellow 17	18965	6359-98-4		■	■	■	
269675	SANOLIN ACID RED SP LIQ	Acid Red 33	17200	3567-66-6		■	■	■	
244292	SANOLIN PONCEAU SP LIQID	Acid Red 18	16255	2611-82-7		■	■	■	
270027	SANOLIN TARZTRAZIN SP LIQ	Acid Yellow 23	19140	1934-21-0		■	■	■	

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law	ASTM 963-07 e1, Table 1
				★		■		■			■ ¹	1	1	■
				★		■					■ ²			■
				★		■					■ ¹			■
				★		■					■ ²	4		■
				❖		■					■ ¹			■
				❖		■					■ ²			■
				★		■					■ ²			■
				❖		■					■ ²			■
				❖		■					■ ²			■
				★		■		■			■ ¹	1	1	■
				★		■		■				1		■
				★		■		■			■ ¹	1		■
				★		■		■			■ ¹	1		■
				★		■		■			■ ¹	1		■
				★		■					■ ²			■
				★		■					■ ²			■
				★		■					■ ¹	4	1	■
				★		■		■			■ ¹	1	1	■
				★		■					■ ¹			■
				❖		■					■ ²			■
				★		■					■ ²			■
				★		■					■ ²			■
				★		■					■ ²			■
				★		■					■ ²			■
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				★		■					■ ²			■
				★		■					■ ²			■
				★		■					■ ¹			■
				★		■					■ ¹			■
				★		■					■ ¹			■
				★		■					■ ¹			■

SAVINYL, SOLVAPERM, TONER

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
104390	SAVINYL BLUE RS	Solvent Blue 45	-	-	■	■	■	■	■
103322	SAVINYL BROWN GLS	-	-	-	■	■	■	■	■
110331	SAVINYL DARK VIOLET R	Acid Violet 66	-	-	■	■	■	■	■
115318	SAVINYL GREEN 2GLS 01	-	-	-	■	■	■	■	■
103327	SAVINYL ORANGE RLS	Solvent Orange 41	-	-	■	■	■	■	■
103321	SAVINYL ORANGE RLSE	Solvent Orange 62	-	-	■	■	■	■	■
103337	SAVINYL RED 3BLS	Solvent Red 91	-	-	■	■	■	■	■
103324	SAVINYL YELLOW 2RLS	Solvent Yellow 62	-	-	■	■	■	■	■
103319	SAVINYL YELLOW RLS	Solvent Yellow 83:1	-	-	■	■	■	■	■
103328	SAVINYL YELLOW RLSN	Solvent Yellow 83	-	-	■	■	■	■	■
103330	SAVINYL BLUE GLS	Solvent Blue 44	-	-	■	■	■	■	■
104148	SOLVAPERM BLUE 2B	Solvent Blue 104	61568	116-75-6	■	■	■		■
103494	SOLVAPERM GREEN G	Solvent Green 28	625580	4851-50-7	■	■	■		■
104287	SOLVAPERM GREEN GSB	Solvent Green 3	61565	128-80-3	■	■	■		■
103282	SOLVAPERM ORANGE 3G	Solvent Orange 60	564100	6925-69-5	■	■	■		■
103528	SOLVAPERM RED 2G	Solvent Red 179	564150	6829-22-7	■	■	■		■
104940	SOLVAPERM RED BB	Solvent Red 195	-	-	■	■	■		■
103313	SOLVAPERM RED PFS	Solvent Red 111	60505	82-38-2	■	■	■		■
104944	SOLVAPERM RED VIOLET R	Solv. V. 59/Disp. Violet 26	62025	6408-72-6	■	■	■		■
103308	SOLVAPERM VIOLET RSB	Solvent Violet 13	60725	81-48-1	■	■	■		■
107585	SOLVAPERM YELLOW 2G	Solv. Y. 114/Disp. Y. 54	47020	7576-65-0	■	■	■		■
103307	SOLVAPERM YELLOW 3G	Solvent Yellow 93	48160	4702-90-3	■	■	■		■
234271	TONER MAGENTA E	Pigment Red 122	73915	980-26-7	■	■	■		■
118403	TONER MAGENTA E02	Pigment Red 122	73915	980-26-7	■	■	■		■
118383	TONER YELLOW 3GP	Pigment Yellow 155	200310	68516-73-4	■	■	■		■
215049	TONER YELLOW 4G	Pigment Yellow 155	200310	68516-73-4	■	■	■		■
238642	TONER YELLOW 5GXT VP 3754	Pigment Yellow 74	11741	6358-31-2	□	□	■		□
107587	TONER YELLOW HG	Pigment Yellow 180	21290	77804-81-0	□	■	■		□

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
B	■	■		◆		■	■	■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
B	■	■		◆		■		■					■
			■	◆	●	■	■	■	■	■	■ ¹		■
				◆	●	■	■	■	■	■	■ ¹		■
			■	◆		■	■	■	■	■	■ ¹		■
			●	◆		■	■	■	■	■			■
				◆	●	■		■	■	■	■ ¹		■
			●	◆		■	■	■	■	■			■
			●	◆		■	■	■	■	■			■
			■	◆		■	■	■	■	■	■ ¹		■
			■	◆		■	■	■	■	■			■
			■	◆		■	■	■	■	■	■ ¹		■
A	■	■		◆		■		■					■
A	■	■		◆		■		■					■
A	■	■		◆		■		■					■
A	■	■		◆		■		■					■
B	■	■		◆		■		□					■
A	■	■		◆		■		□					■

VISCOFIL

Product No.	Product name	C.I. Generic name	C.I. No.	CAS	Recommendation IX (BFR)	2002/61/EC	European Resolution AP (89)1	EN 71-9	EU NO 10/2011
111336	VISCOFIL BLACK 2BLN	Pigment Black 7	77266	1333-86-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159702	VISCOFIL BLUE ARN	Pigment Blue 15	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
226067	VISCOFIL BLUE B2G 30 VP 3494	Pigment Blue 15:3	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
207694	VISCOFIL BLUE BL 500	Pigment Blue 15	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159685	VISCOFIL BLUE FRVD	Pigment Blue 15	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
231178	VISCOFIL BORDEAUX BB 30 VP 3504	Pigment Violet 32	12517	12225-08-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
226066	VISCOFIL BROWN HFR 30 VP 3203	Pigment Brown 25	12510	6992-11-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
219795	VISCOFIL GOLDEN RVD*	Pigment Yellow 13	21100	5102-83-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159681	VISCOFIL GOLDEN YELLOW RRVDN	P. Y. 3 / P. O. 4	12459	21889-27-0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
147530	VISCOFIL GREEN A-GNS	Pigment Green 7	74260	1328-53-6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159686	VISCOFIL GREEN GVDN 20	P. Y. 17 / P. B. 15 / P. B. 15:3	74160	147-14-8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
233992	VISCOFIL ORANGE GG 30 VP 3525*	Pigment Orange 13	21110	3520-72-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159682	VISCOFIL ORANGE GRVD	Pigment Orange 4	12459	21889-27-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
240674	VISCOFIL ORANGE RL 30 VP 3930*	Pigment Orange 34	21115	15793-73-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159701	VISCOFIL RED AGN	Pigment Red 2	12310	6041-94-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
104227	VISCOFIL RED BL	Pigment Red 5	12490	6410-41-9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
231179	VISCOFIL RED F5RK 30 VP 3501	Pigment Red 170	12475	2786-76-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159683	VISCOFIL RED GVD	Pigment Red 2	12310	6041-94-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
233991	VISCOFIL RED R 31 VP 3666	Pigment Red 112	12370	6535-46-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
224610	VISCOFIL RUBINE BFVD	Pigment Red 32	12320	6410-29-3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
165094	VISCOFIL VIOLET BLNL	Pigment Violet 23	51319	6358-30-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
108120	VISCOFIL VIOLET BLN	Pigment Violet 23	51319	6358-30-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
131800	VISCOFIL WHITE A-RCL 30	Pigment White 6	77891	13463-67-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
103302	VISCOFIL YELLOW 2GLL	Pigment Yellow 155	200310	68516-73-4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159688	VISCOFIL YELLOW A2GN*	Pigment Yellow 14	21095	5468-75-7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159689	VISCOFIL YELLOW AGX	Pigment Yellow 74	11741	6358-31-2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
159680	VISCOFIL YELLOW GGVD*	Pigment Yellow 17	21105	4531-49-1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
227843	VISCOFIL YELLOW RR 31 VP 3503*	Pigment Yellow 83	21108	5567-15-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

** The product is a benzimidazolone pigment that can be processed in polyolefines up to 290 °C

* The product contains a diarylide pigment which must not be used in polymers if the processing temperature exceeds 200 °C.

Swiss Ordinance	EUPIA Inventory List	EUPIA Exclusion List	French Positive List	Heavy metals accord. to EN 71-3 (section 4.1.1)	USA : FDA	CONEG Regulation	Japan (JHOSPA)	Australian Standard AS 2070-1999	MERCOSUL FC Regulation Plastics	MERCOSUL Toys Regulation NM 300-3	EU Detergents Regulation 648/2004	EU Cosmetic Regulation 1223/2009	Japan: Colorants for cosmetics and drugs regulated by Pharmaceutical Affairs Law ASTM 963-07 e1, Table 1
				◆		■		□					■
				◇		■		□					■
				◇		■		□					■
				◇		■		□					■
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				◆		■		□*					■
				◆		■		□*					■

6 – Tables

**FRENCH POSITIVE LIST -
COMPLIANT COLORANTS WITH
PRESCRIBED LIMITATIONS**

Product No.	Product Name	C.I. Generic name	Limitation
221652	GRAPHTOL RED F3RK 70	Pigment Red 170	LDPE; HDPE
217716	GRAPHTOL RED F5RK	Pigment Red 170	LDPE; HDPE
103300	GRAPHTOL YELLOW 3GP	Pigment Yellow 155	Approved in all plastic materials up to 1% by weight
104971	NOVOPERM RED F2RK 70	Pigment Red 170	LDPE; HDPE
105528	NOVOPERM RED F3RK 70	Pigment Red 170	LDPE; HDPE
216357	NOVOPERM RED F5RK	Pigment Red 170	LDPE; HDPE
187853	NOVOPERM YELLOW 4G 01	Pigment Yellow 155	Approved in all plastic materials up to 1% by weight
187854	NOVOPERM YELLOW 5GD 71	Pigment Yellow 155	Approved in all plastic materials up to 1% by weight
214035	POLYSYNTHREN RED GFP	Solvent Red 135	Approved in all plastic materials up to 1% by weight
174486	POLYSYNTHREN YELLOW NG	Pigment Yellow 147	Approved in all plastic materials up to 1% by weight
103477	PV FAST BROWN RL	Pigment Brown 41	Approved in all plastic materials up to 1% by weight
106616	PV FAST ORANGE H4GL 01	Pigment Orange 72	PE; PP; PVC; PS; ABS up to 0.3% by weight; Migration limit: 50 ppb
105096	PV FAST RED 3B	Pigment Red 144	Approved in all plastic materials up to 1% by weight
103281	PV FAST RED BNP	Pigment Red 214	Approved in all plastic materials up to 1% by weight
103282	SOLVAPERM ORANGE 3G	Solvent Orange 60	Approved in all plastic materials up to 1% by weight, not authorized for contact with fatty foods, alcohol and vinegar based products
103313	SOLVAPERM RED PFS	Solvent Red 111	PC; PVC; PMMA; PS and Copolymers
104944	SOLVAPERM RED VIOLET R	Disperse Violet 26	PC; PVC; PMMA; PS and Copolymers

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FDA COMPLIANT COLORANTS INCLUDING PRESCRIBED LIMITATIONS WHEN INDICATED - PIGMENTS

Product No.	Product Name	C.I. Generic name	Polymer	Upper concentration in % by weight	Condition* of use as defined in 21 CFR 176.170	FDA 21 CFR Chapter 1 part 73 & 74	Food types**
216192	COSMETIC PINK RC 01	Pigment Red 181/ Vat Red 1/ D&C Red 30				21 CFR 74.1330 21 CFR 74.2330	Cosmetics
153603	GRAPHTOL BLUE AN	Pigment Blue 15				FDA compliant colorant in accordance with 21 CFR 178.3297	
116674	HOSTAPERM YELLOW H4G	Pigment Yellow 151	PET	0.01	E - F - G		Aqueous, acidic, low alcohol
213632	HOSTAPERM YELLOW H4G 70	Pigment Yellow 151	PET	0.01	E - F - G		Aqueous, acidic, low alcohol
104943	PV FAST BLUE 2GLSP	Pigment Blue 15:1				FDA compliant colorant in accordance with 21 CFR 178.3297	
153604	PV FAST BLUE A4R	Pigment Blue 15:1				FDA compliant colorant in accordance with 21 CFR 178.3297	
104935	PV FAST BLUE A2R	Pigment Blue 15:1				FDA compliant colorant in accordance with 21 CFR 178.3297	
106313	PV FAST BLUE BG	Pigment Blue 15:3				FDA compliant colorant in accordance with 21 CFR 178.3297	
115058	HOSTAPERM BLUE A2R	Pigment Blue 15:1				FDA compliant colorant in accordance with 21 CFR 178.3297	
153605	HOSTAPERM BLUE A4R	Pigment Blue 15:1				FDA compliant colorant in accordance with 21 CFR 178.3297	
107264	HOSTAPERM BLUE AFL	Pigment Blue 15:2				FDA compliant colorant in accordance with 21 CFR 178.3297	
104942	HOSTAPERM BLUE B2G	Pigment Blue 15:3				FDA compliant colorant in accordance with 21 CFR 178.3297	
153600	HOSTAPERM BLUE B2G-L	Pigment Blue 15:3				FDA compliant colorant in accordance with 21 CFR 178.3297	
153601	HOSTAPERM BLUE B4G	Pigment Blue 15:3				FDA compliant colorant in accordance with 21 CFR 178.3297	
115058	HOSTAPERM BLUE BG	Pigment Blue 15:3				FDA compliant colorant in accordance with 21 CFR 178.3297	
105128	PV FAST GREEN GNX	Pigment Green 7				FDA compliant colorant in accordance with 21 CFR 178.3297	
105070	HOSTAPERM GREEN GG 01	Pigment Green 7				FDA compliant colorant in accordance with 21 CFR 178.3297	
103278	HOSTAPERM GREEN GLS 01	Pigment Green 7				FDA compliant colorant in accordance with 21 CFR 178.3297	
105775	HOSTAPERM GREEN GNX	Pigment Green 7				FDA compliant colorant in accordance with 21 CFR 178.3297	
206985	HOSTAPERM GREEN GNX-C	Pigment Green 7				FDA compliant colorant in accordance with 21 CFR 178.3297	
209064	PV FAST ORANGE H2GL VP 3044	Pigment Orange 64	All	1	B - H		All foods
107491	PV FAST PINK E	Pigment Red 122	All	1	D - G		Aqueous, acidic, low alcohol
				0.5	D - G		Fatty foods
				0.2	A - H		All foods
104953	PV FAST PINK E 01	Pigment Red 122	All	1	D - G		Aqueous, acidic, low alcohol
				0.5	D - G		Fatty foods
				0.2	A - H		All foods

Product No.	Product Name	C.I. Generic name	Polymer	Upper concentration in % by weight	Condition* of use as defined in 21 CFR 176.170	FDA 21 CFR Chapter 1 part 73 & 74	Food types**
207688	PV FAST RED D3G	Pigment Red 254	All	1	B - H		All foods
104998	PV FAST RED HF4B	Pigment Red 187	All	1	B - H		All foods
105007	NOVOPERM RED HF4B	Pigment Red 187	All	1	B - H		All foods
105052	PV FAST RED E3B	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
104959	PV FAST RED E5B	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
107494	PV FAST VIOLET ER	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
248292	PV FAST VIOLET E4G	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
104947	HOSTAPERM RED E3B	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
104960	HOSTAPERM RED E5B O2	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
104954	HOSTAPERM RED VIOLET ER O2	Pigment Violet 19					FDA compliant colorant in accordance with 21 CFR 178.3297
167585	PV FAST YELLOW H9G VP 2430	Pigment Yellow 214	All	1	A - H		All foods
232814	PV FAST YELLOW H4G	Pigment Yellow 151	PET	0.01	E - F - G		Aqueous, acidic, low alcohol
183981	PV FAST YELLOW HG O1	Pigment Yellow 180	All	1	B - G		All foods
104918	PV FAST YELLOW HG	Pigment Yellow 180	All	1	B - G		All foods
182077	PV FAST YELLOW H2GR	Pigment Yellow 191	All	1	B - H		All foods
107497	PV FAST YELLOW HGR	Pigment Yellow 191	All	1	B - H		All foods
104917	PV FAST YELLOW H3R	Pigment Yellow 181	All	1	B - H		All foods

*** Legend for Food contact conditions:**

- A = Container is heat sterilized over 212 °F.
- B = Container is sterilized with boiling water.
- C = Container is hot filled or pasteurized above 150 °F.
- D = Container is hot filled or pasteurized below 150 °F.
- E = Room temperature filled and stored.
No thermal treatment in the container.
- F = Refrigerated storage. No thermal treatment in the container.
- G = Frozen storage. No thermal treatment in the container.
- H = Frozen or refrigerated storage. Ready prepared foods intended to be reheated or microwaved in container at time of use.
- I = Irradiation
- J = Cooking at temperatures exceeding 250 °F.

**** Legend for food types:**

- I = Nonacid, aqueous products; may contain salt or sugar or both (pH above 5.0).
- II = Acid, aqueous products; may contain salt or sugar or both, and including oil-in-water emulsions of low- or high-fat content.
- III = Aqueous, acid or nonacid products containing free oil or fat; may contain salt, and including water-in-oil emulsions of low- or high-fat content.
- IV = Dairy products and modifications:
 - A. Water-in-oil emulsions, high- or low-fat.
 - B. Oil-in-water emulsions, high- or low-fat.
- V = Low-moisture fats and oil.
- VI = Beverages:
 - A. Containing up to 8 percent of alcohol.
 - B. Nonalcoholic.
 - C. Containing more than 8 percent alcohol.
- VII = Bakery products other than those included under Types VIII or IX of this table:
 - A. Moist bakery products with surface containing free fat or oil.
 - B. Moist bakery products with surface containing no free fat or oil.
- VIII = Dry solids with the surface containing no free fat or oil (no end test required).
- IX = Dry solids with the surface containing free fat or oil.

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FDA COMPLIANT COLORANTS WITH PRESCRIBED LIMITATIONS - DYES

Product No.	Product Name	C.I. Generic name	Polymer	Upper concentration in % by weight	Condition* of use as defined in 21 CFR 176.170	Food types**
103480	POLYSYNTHREN BLUE RLS	Solvent Blue 45	PET	0.4	C - G	Aqueous, acidic, low alcohol
105119	POLYSYNTHREN BROWN R	Solvent Brown 53	PET	0.2	C - G	All foods
214035	POLYSYNTHREN RED GFP	Solvent Red 135	PET	0.2	E - F - G	Aqueous, acidic, low alcohol
				0.045	C - D	Aqueous, acidic, low alcohol, high alcohol, fatty foods
107487	POLYSYNTHREN YELLOW GG	Solvent Yellow 133	PET	0.2	E - F - G	Aqueous, acidic, low alcohol
174486	POLYSYNTHREN YELLOW NG	Pigment Yellow 147	PET	0.25	E - F - G	All foods
				0.25	D - E - F - G	Food types III, IV - A and V
104148	SOLVAPERM BLUE 2B	Solvent Blue 104	PET	0.2	E - F - G	Aqueous, acidic, low alcohol
103494	SOLVAPERM GREEN G	Solvent Green 28	PET	0.2	E - F - G	Aqueous, acidic, low alcohol
104940	SOLVAPERM RED BB	Solvent Red 195	PET	0.2	E - F - G	Aqueous, acidic, low alcohol

*** Legend for Food contact conditions:**

- A = Container is heat sterilized over 212 °F.
- B = Container is sterilized with boiling water.
- C = Container is hot filled or pasteurized above 150 °F.
- D = Container is hot filled or pasteurized below 150 °F.
- E = Room temperature filled and stored.
No thermal treatment in the container.
- F = Refrigerated storage. No thermal treatment in the container.
- G = Frozen storage. No thermal treatment in the container.
- H = Frozen or refrigerated storage. Ready prepared foods intended to be reheated or microwaved in container at time of use.
- I = Irradiation
- J = Cooking at temperatures exceeding 250 °F.

**** Legend for food types:**

- I = Nonacid, aqueous products; may contain salt or sugar or both (pH above 5.0).
- II = Acid, aqueous products; may contain salt or sugar or both, and including oil-in-water emulsions of low- or high-fat content.
- III = Aqueous, acid or nonacid products containing free oil or fat; may contain salt, and including water-in-oil emulsions of low- or high-fat content.
- IV = Dairy products and modifications:
 - A. Water-in-oil emulsions, high- or low-fat.
 - B. Oil-in-water emulsions, high- or low-fat.
- V = Low-moisture fats and oil.
- VI = Beverages:
 - A. Containing up to 8 percent of alcohol.
 - B. Nonalcoholic.
 - C. Containing more than 8 percent alcohol.
- VII = Bakery products other than those included under Types VIII or IX of this table:
 - A. Moist bakery products with surface containing free fat or oil.
 - B. Moist bakery products with surface containing no free fat or oil.
- VIII = Dry solids with the surface containing no free fat or oil (no end test required).
- IX = Dry solids with the surface containing free fat or oil.

7 – Appendix

7.1 ABBREVIATIONS

AASA	Aromatic Amino Sulfonic Acids	EuPIA	European Printing Ink Association
AFNOR	Association Française de Normalisation	FDA	Food and Drug Administration
BfR	Bundesinstitut für Risikobewertung (Federal Institute for Risk Evaluation, Germany) formerly: BgVV	HPB	Health Protection Branch (Canada)
C.I.	Colour Index	JHOSPA	Japan Hygienic Olefin and Styrene Plastics Association
CAS No.	Internationally used Chemical Abstracts Number for the clear identification of chemical compounds. It is issued once only and allocated to a chemical substance by the CAS (Chemical Abstracts Service)	LFGB	Lebensmittel-, Bedarfsgegenstände- und Futtermittelgesetzbuch (Food, Consumer Goods and Feed Act, Germany)
CEN	Comité Européen Normalisation	MAK	Maximale Arbeitsplatzkonzentration (Germany)
CFR	Code of Federal Regulations	PAA	Primary Aromatic Amines
CONEG	Coalition of Northeastern Governors	PCB	Polychlorinated biphenyls
DIN	Deutsches Institut für Normung (Germany)	PNS	Philippine(s) National Standard
EN	European Standard	ppm	parts per million
ETAD	Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers	PVC	Polyvinyl chloride
EU	European Union	USDA	United States Department of Agriculture

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