



STOCKMAR

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WAX CRAYONS: PRODUCT FEATURES AND PRODUCT QUALITY

QUALITY AND MONITORED SAFETY

For decades, the quality of its products has been central to STOCKMAR's development. The pioneering quality of STOCKMAR products became evident when the effects of products and raw materials on people and the environment became a matter of public interest.

STOCKMAR'S extra monitoring programme

European standard DIN EN 71 sets limits for hazardous substances including heavy metals and aromatic amines for toys, writing utensils, paints and modelling wax.

But it doesn't go far enough for STOCKMAR. So STOCKMAR added new parameters to its quality control programme. This takes into account all hazardous material groups that can be present in raw materials or after production in wax crayons, watercolours, modelling beeswax, decorating wax, opaque colours and coloured pencils.

STOCKMAR MONITORING PROGRAMME

- Heavy metals
- Aromatic amines
- Pesticides*
- Polychlorinated biphenyls*
- Polycyclic aromatic hydrocarbons*
- Organohalogen compounds (AOX)*
- MOAH*

Cooperation with an independent laboratory

In consultation with an independent laboratory, investigation parameters are defined, raw materials selected and production set up in such a way that the use of STOCKMAR products is harmless.

An independent laboratory regularly tests for the following parameter groups in raw materials and finished products:

- Heavy metals
- Aromatic amines
- Pesticide residues*
- Polychlorinated biphenyls*
- Polycyclic aromatic hydrocarbons*
- AOX*
- MOAH*

The hazardous materials investigated are widespread in the environment, and represent a potential hazard for human health.

STOCKMAR has voluntarily included the hazardous materials marked * in its monitoring programme.

STOCKMAR products do not endanger human health or the environment in any way.

PESTICIDES

Pesticides can enter raw materials, and especially beeswax, in various ways. Pesticides are taken up by bees when they collect pollen from treated plants. The bees then contaminate the wax. It also happens that beekeepers treat their bees against bee-specific mite infestation with acaricides. Organic colours can also be contaminated with pesticide residues.

POLYCHLORINATED BIPHENYLS

Polychlorinated biphenyls (PCBs) have been used in many industries in the past decades. These industrial chemicals have entered the environment in quantity and are a major health hazard.

Since for toys there are no limit values either for pesticide residues or for polychlorinated biphenyls, STOCKMAR applies the lower end of the maximum permissible limits for foods.

HEAVY METALS

Heavy metals and primary aromatic amines can be contained in certain pigments or occur as contaminants in raw materials. The levels of heavy metals found in STOCKMAR products are far below the limit values in European standard EN 71.

AROMATIC AMINES

Constant testing of pigments for aromatic amines has led to a rigorous selection of the colour mixtures used, with the goal of eliminating aromatic amine contamination from STOCKMAR products.

POLYCYCLIC AROMATIC HYDROCARBONS

Polycyclic aromatic hydrocarbons (PAHs) can form during the production of waxes or occur in beeswax and pigments. The PAH levels measured thus far are at the limit of detectability and are very low.

AOX (ORGANOHALOGEN COMPOUNDS)

The newest findings show that the causes for the very low levels of AOX that have been found in samples are attributable to halogenated pigments. The phthalocyanines we use represent the Best Available Technology, and so are very high-quality and low in hazardous substances.

MOAH

Our raw materials are subject to constant testing for MOAH, with the goal of eliminating MOAH contamination from the pure, high-melting paraffins used in our STOCKMAR products.

The food-safe microcrystalline waxes used in our wax crayons have been tested and approved as food-safe by the European Food Safety Authority (EFSA).

Provided that the recommendation of Cosmetics Europe is complied with, the German Federal Institute for Risk Assessment (BfR) does not expect oral ingestion to have any effects on health¹.

¹ Updated statement No 008/2018 of the BfR, issued on 19 February 2018

COLOURING AGENTS

Following thorough testing, the STOCKMAR company has decided to continue the use of pigments which have been authorized for use in the colouration of packaging for foodstuffs.¹⁾

The STOCKMAR company has carried out a careful examination and selection of the colouring agents available on the market. All the colouring agents we use must fulfil the following criteria:

- toxicologically harmless for use in toys.
- insoluble in both the material to be colour-dyed as well as in water, thus physiologically non-reactive.
- brilliant and transparent colour tone.
- heat-resistant.
- migrationaly consistent (no discolouration of hands or paper).
- high non-fade properties.

For the manufacturing of completely harmless products which at the same time have excellent utility value, STOCKMAR accepts only such selected colouring agents.

The colouring agents we select are organic-synthetic or inorganic-synthetic pigments which have been authorized for use in the colouration of packaging for foodstuffs.

As can be seen in the chart, the quality of the final product is in no way improved by using food colours that have been authorized for the colouration of foodstuffs.

The average pigment content of STOCKMAR products lies in the range between 2 and 14 %, depending on product group (modelling waxes, wax sheets, wax crayons and watercolours).

The raw materials required for the remaining portion of the prescribed contents, which e.g. amounts to 90 % in the case of wax crayons, must also fulfil the high quality requirements and are also tested for harmlessness.

By including all the respective components in our testing procedures, we can guarantee the high level of safety and quality associated with STOCKMAR products. For information on the range and types of testing, see Product Information 1.

COLOURS

common term for colouring agents.

COLOURING AGENTS

general term for all substances used to produce colouring: dyes, coloured paints, pigments.

DYES

due to their solubility in the employed substance, dyes are generally not suitable for wax crayons and modelling waxes.

¹⁾ With the term "colour", one commonly means anything that creates a coloured effect. For a better understanding of our explanations, a few terms should be defined.

COLOURED PAINTS

so-called pseudo-pigments; many food colours are actually coloured paints.

PIGMENTS

particularly suitable for wax crayons because they are virtually insoluble in the employed substance.

ORGANIC

all substances from the animal and plant realms (e.g. oil or petroleum, coal, wood, ivory, shell, indigo plant).

INORGANIC

all substances which contain no carbon.

SYNTHETIC

a substance that has been formed from its individual components.

Terms like “organic-synthetic” and “inorganic-synthetic” are attempts to clearly identify the various colouring agents and then categorize them.

If you desire further information, please contact us. We also recommend consulting relevant technical literature.

Selection Criteria for Colouring Agents used by STOCKMAR

	Organic pigments for packaging of foodstuffs (selection)	Organic food colours	Coloured paints for foodstuffs	Inorganic pigments for packaging of foodstuffs (selection)
Toxicological harmlessless	yes	yes	yes	yes
Non-fade properties	excellent	poor	extremely variable	excellent
Brilliant colour tone	yes	extremely variable	extremely variable	no (with exceptions)
Heat resistance	very good	poor	poor	excellent
Migrational consistency	very good	poor	poor	very good
Wide colour range	yes	limited	no	no

WAX CRAYONS: PRODUCT FEATURES AND PRODUCT QUALITY

Ingredients - STOCKMAR wax crayon colours contain the following:

INGREDIENTS	% (approx.)
Paraffin (microcrystalline waxes)	52
Stearines (vegetable wax)	30
Beeswax	10
Synthetic organic and/or synthetic inorganic pigments	8 or more
The quantities specified are only approximate because the amount of pigment can vary depending on the strength of the colour, and this in turn affects the proportions of the other ingredients.	

Why are our wax crayons and blocks designed the way they are?

Since the 1950s, STOCKMAR wax crayons and blocks have been developed in collaboration with teachers, childcare workers, art therapists and artists. These exchanges have led to STOCKMAR'S long-standing focus on the following three aspects when it comes to creating its wax crayon colours (which, incidentally, are exactly the same in our crayons as in our blocks):

- Colour spectrum
- Colouring qualities
- Health and environmental safety

Colour spectrum

STOCKMAR'S colour spectrum derives from the company's connection with Waldorf education and its partnership with Waldorf teachers and childcare workers, and is based on Goethe's theory of colour. Indeed, the harmony between the three primary colours of red, blue and yellow and the secondary colours of orange, green and violet is inspired by Goethe's colour wheel.

The pigments used by STOCKMAR are synthetic-organic pigments manufactured in Europe (Germany, Switzerland). They are selected based primarily on the following two criteria:

1. They give STOCKMAR crayons and blocks the colour tones needed to complete our colour wheel.
2. They comply with the pertinent statutory regulations, allowing us to declare categorically that STOCKMAR wax crayon colours pose no risks to health or the environment. More information on this topic can be found below.

The “lovely glow” for which our colours are renowned is thanks to the choice of pigments used and to the specific ratio of pigment to the other ingredients in our wax crayon colours. This special recipe is also responsible for the excellent colouring qualities of STOCKMAR wax colour crayons.

Colouring qualities

It's not only our crayons' colour spectrum, but also their colouring qualities, that set them so clearly apart from other wax crayon colours. Since the 1950s, STOCKMAR'S focus has been on ensuring that its wax crayons meet the same stringent requirements.

According to these, STOCKMAR wax colour crayons should possess the following characteristics:

- A strong but non-paste-like stroke of colour
- Excellent blendability, allowing for
- layered colouring.

These colouring qualities clearly distinguish STOCKMAR wax crayons from pastel crayons, for which they are often mistaken, and from most other wax crayons, which use different fillers (such as chalk) to achieve a pastel- or paste-like stroke on paper (we therefore avoid using the term “Kreiden” (German for chalk) for our wax crayons and blocks).

STOCKMAR wax crayon colours do not contain any fillers at all. Rather, they contain an especially high proportion of colour pigment, which gives them their characteristic radiance. The especially luminous tones created through blending and layering the different colours are also thanks to the aforementioned colour spectrum and to the pigments used in the crayons' manufacture.

The fact that STOCKMAR wax crayons and blocks are so well-suited to colouring in layers results from the specific wax components used. In addition to beeswax, STOCKMAR wax crayon colours contain plant-based stearin as well as industrially manufactured microcrystalline waxes.

The beeswax gives STOCKMAR wax crayons colours their pleasant scent. It also contains essential oils that help to preserve our wax crayons colours, enabling us to do without additional preservatives.

The particular blend of wax components used in STOCKMAR wax crayons is the result of decades of manufacturing experience and of careful tailoring according to our customers' individual requirements. It is what gives our crayons their translucence as well as their non-stick, non-crumble properties, which in turn makes them so well-suited to layering.

These qualities also make STOCKMAR wax crayon colours ideal for other colouring techniques, such as

- transparent colouring on transparent carrier material (tracing paper)
- scratching (sgraffito)
- wax melting (encaustic painting)

Instructions on how to perform the various colouring techniques with our wax crayon colours can be downloaded from our website at www.stockmar.de.

Health and environmental safety

We know how quality-conscious our customers are, especially our core customers from the school and kindergarten sector, that is teachers, childcare workers and parents. We know just how much these customers value the colour spectrum and the colouring qualities offered by STOCKMAR wax colour crayons.

We also know that quality-conscious customers attach great importance to health, environmental friendliness and sustainability.

Ever since STOCKMAR began manufacturing wax crayon colours, we have been wholeheartedly committed to producing only products that are entirely safe both in terms of health and the environment.

To ensure that we comply with this principle, we select only ingredients that meet all the provisions of the applicable toy safety standards. And wherever we feel that these provisions don't go far enough, we apply the pertinent food and cosmetics safety provisions to ensure the health and environmental safety of our wax crayons. The microcrystalline waxes we use correspond precisely with the pertinent cosmetic industry regulations (in fact, our wax crayons are even used in the cosmetics industry).

Moreover, for the added safety of our customers and for our own, we have an independent laboratory (Labor für Rückstandsanalytik, Bremen) carry out random sampling on every single batch of raw materials delivered to us.

We display our consistent product quality, achieved through careful ingredient selection and verified through regular raw material checks, on the packaging of our STOCKMAR wax crayons. Here customers will find the CE label for toy safety as well as quality seals "spiel gut" awarded by the German association Arbeitsausschuss Kinderspiel und Spielzeug e.V. (www.spielgut.de) and "AP - conforms to ASTM D-4236", awarded by the American organisation ACMI (www.acmiart.org).

Why STOCKMAR uses paraffin (microcrystalline waxes)

Paraffin's non-toxicity and insolubility make it a popular ingredient in many sectors. It is a common ingredient in lotions, skin creams and lip care products, and even the main ingredient in many skin protection creams for small children. It is also used in foods (sweets, chewing gum, wax coatings for cheese) and in the medical sectors (as an antidote in the treatment of poisoning and as a laxative). It will only form deposits in the human body if consumed regularly over a long period of time.

Regular consumption over a long period of time is highly unlikely in the case of wax crayons.

Moreover, according to experts, the health hazards associated with paraffin have nothing to do with its potential to form deposits in the body. Rather, they relate to the carcinogenic substances that can be released when paraffin is heated. These health hazards affect people whose work regularly involves heating paraffin and, as a result, breathing in the fumes this emits. This risk therefore does not affect users of cosmetics, medicines and wax crayons.

In the manufacture of our wax crayons, we use high-melting microcrystalline waxes that only melt at temperatures of around 70°C. So is there any chance of them melting in children's hands or if swallowed? Not if their melting point is 70°C, no.

The microcrystalline waxes in our wax crayons boast exceptionally good colouring qualities. In contrast to chalky fillers, which tend to dull down colours, these waxes lend translucence and vibrancy to the pigments used.

Paraffins are by-products of motor oil production. As mineral oil products they are, of course, not renewable. Nonetheless, there are currently no resource and ecologically friendly alternatives to paraffin that would enable us to achieve the same excellent colouring qualities.

Soya and palm oil are often promoted as renewable alternatives, but they cannot offer the same product quality and, from our point of view, do not offer more benefits in terms of ecological soundness. Their use creates a higher demand for monocultures and a need for more agricultural land, which in turn leads to rainforest destruction and the manifold environmental and social problems associated with it.

Why STOCKMAR wax crayons only contain 10% beeswax – no more, no less

STOCKMAR wax crayons contain 10% natural beeswax. This gives them the right degree of translucence as well as their pleasant scent. Beeswax also contains essential oils that help to preserve our wax crayons colours, enabling us to do without additional preservatives.

Using much more than 10% beeswax would compromise the colouring qualities of our wax crayons. Not only would this lead to the release of less pigment, but, because wax has its own colour, it would distort our product's carefully developed colour tones. Using a higher proportion of beeswax is therefore not necessary.

Beeswax – a highly advertising-friendly term at first glance. After all, it's a natural, renewable product, it smells good, and everyone admires bees. So, what is beeswax exactly? It is a precious and limited natural product. In the interest of bees, whose numbers throughout the world are falling drastically, it should only be used responsibly and in moderation. Any beekeeping activities aimed at increasing beeswax production would subject the bees to unnatural conditions and thus be highly ecologically dubious.

Moreover, why would we want to use more beeswax? Doing so would be of no benefit to the quality of our products and thus result in the unnecessary consumption of this precious natural resource.

This is why STOCKMAR consciously only uses 10% beeswax in its wax crayons. For more information on beeswax and bees, go to www.mellifera.de.

STOCKMAR product range



WATERCOLOUR PAINTS

COLOURED PENCILS

OPAQUE COLOURS

MODELLING BEESWAX

WAX CRAYONS

DECORATING WAX

STOCKMAR products bear international quality seals

HALLMARKS

EG (EN71) Conforms to ASTM
D-4236



With this seal, STOCKMAR stands behind the quality of its products.

STOCKMAR quality is monitored safety.

STOCKMAR products are hazardous neither to people nor the environment.

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