

Newspaper inks and the environment

More than just ink ...

Admittedly, there are punchier slogans than this one. What we wanted, however, wasn't a slogan that is novel or witty just for the sake of it, but one that expresses the fundamental attitude that prevails at and how we think in our company: that it's simply not enough to restrict one's activities just to offering outstanding products, great service and a constant readiness to deliver.

We wanted a slogan that also takes in our self-imposed commitment under which everything we do is in harmony with our environment. This applies to our entire product range – including our newspaper inks. Where the end product – the newspaper – itself contributes towards the shaping of public opinion, the general public shows great interest in the questions of environmental protection and product safety.

When it comes to newspaper printing, it's not just a question of excellent printability and a good print image but of an environmentally compatible mode of handling the ink and an “environment-friendly” print result.

We have compiled the **hubergroup's** stance and experience as regards the topic of “Newspaper inks and the environment” in the form of a questions-and-answers form that is factual, objective and honest.

This would appear to us to be the best foundation upon which to base a relationship of trust.

Questions and answers

Are newspaper inks manufactured in an ‘environment-friendly’ way?

Every industrial activity brings about changes to the environment. What matters, then, is that we keep the effects the newspaper ink production process has on the environment to an absolute minimum. Our ink production plants have to be licensed in accordance with the Federal German Pollution Control Act and satisfy all aspects of the specified standards. This relates not only to emissions and wastes, but also to pieces of auxiliary equipment such as those used to operate the refrigerating compressors, the heating circuits or the container cleaning unit.

Our efforts on the one hand to have almost all the raw materials we require delivered to us in returnable drums and containers and on the other hand to deliver our printing inks to our customers in returnable containers or tankers don't merely have the benefit of preserving the environment, they also help reduce costs.

Do the newspaper ink production plants satisfy recognised environmental standards?

Expert opinions compiled in line with the EU's Eco Audit Ordinance and ISO 14 001 are available for all the sites at which the **hubergroup** produces newspaper inks. The findings of these environmental audits are documented by environmental declarations.

What are newspaper inks made of?

The chrominance or colourfulness of newspaper inks is obtained through the use of water-insoluble pigments. Black is produced using inorganic carbon blacks, while the chromatic colours are made from organic pigments. These pigments are dispersed in the vehicle, a solution that consists of resins borne in mineral or vegetable oils. Small quantities of additives are also used to improve certain printing characteristics.

Are the constituents hazardous substances?

No! None of the raw materials we use require special labelling in line with material identification and labelling regulations and guidelines. If and when individual raw materials are discovered to pose a hazard of some description and become subject to such labelling requirements, they will be replaced by non-hazardous substances. This policy has already been followed in the past with respect to a number of mineral oils.

What role do heavy metals play?

When we talk about heavy metals, we need to distinguish between toxic and non-toxic ones. The former are not used in the production of our inks. The technically unavoidable concentration of traces of toxic heavy metals is regulated by various standards. The total concentration of four such elements, namely lead, mercury, cadmium and chromium(VI), must be less than 100 ppm. This value has been complied with for many years now.

Less toxic heavy-metal compounds, such as specific copper complexes, are used in blue shades and to some extent for toning. In these cases, the copper is present in a chemical form in which it has absolutely no negative effects on the environment. This is also reflected in its classification as a “non-water-endangering” substance. Small quantities of molybdenum and tungsten compounds may also be used in chromatic inks, but thanks to their properties and the very small amounts actually used, they do not pose any threat to the environment.

What about organic halogen compounds?

Organic halogen compounds in the form of chlorinated pigments are used to produce some hues. That said, these are substances that are in no way comparable with conventional chlorinated compounds. In contrast with such compounds, these are not soluble in water, that is, they are of no use with respect to biological processes and they are not volatile. As such, they are capable of polluting neither the atmosphere nor the ground water. Extensive investigations carried out by various ink manufacturers, pigment suppliers and a newspaper publisher, and with the assistance of an environmental protection organisation, led us all to arrive at the standpoint that it is at the present time not feasible to do without chlorinated pigments.

Other comprehensive investigations conducted by the paper industry in cooperation with printing ink manufacturers have likewise confirmed that printing inks do not pose any threat as regards dioxin.

What is the cause of “black fingers” after reading the paper?

Newspaper ink dries by the process known as absorption: that is, the paper absorbs the oils while the pigment particles, together with the resins and the small amounts of oil residue, remain on the surface of the paper. Since no form of energy is employed, the resulting ink film obtained with this “mechanical” drying process is not as smudge-free and setoff-proof as that produced by inks that dry with thermal assistance or by chemical means. This phenomenon may indeed be a nuisance, but it does not pose any health risk thanks to the harmless character of the ink. English nobility and others who are not short of a penny or two solve this problem by getting their butler to run the iron over the newspaper beforehand!

Do your newspaper inks contain VOCs?

VOCs (volatile organic compounds) are organic compounds whose vapour pressure at 20 °C is greater than 10 Pascal. In the production of newspaper inks, oils are used whose boiling point is approximately 300 °C and whose vapour pressure is therefore well below 10 Pascal. This means they are certainly not VOCs, a point that is also underlined by the fact that the pressurised

installations are exempt from all licensing requirements. Despite this, other auxiliaries that contain VOCs also have to be taken into consideration.

Can you wrap your fish & chips in a newspaper?

As those of us of British or Irish descent and old enough to remember know – and sometimes still yearn for! – this practice used to be part of our daily lives. Today, this is no longer the done thing, because newspaper is not exactly the best solution from a packaging point of view. Irrespective of this, however, the use of newspaper to wrap up greasy foods poses no risk to one's health. The constituents of the inks are harmless and apart from that, the amount of them actually on the surface of the paper is exceedingly small. As a result of the increased use of coloured inks in the newspaper sector, the amount of ink on the surface is never any greater than 2 percent by weight, and anything that could find its way onto your chips would be minimal.

Are newspapers easy to deink?

In this more than 200 year-old process, the waste paper is reduced to slime in water. In the case of the flotation technology that is widely in use in Europe, the ink particles are then separated from the paper fibres by blowing in air. What is left behind is a fibrous material with a high level of whiteness, which is recycled to make paper again. Investigations conducted by the "Papiertechnische Stiftung München" (Munich Paper Foundation) have shown that the increased use of chromatic inks is resulting in poorer deinking results.

Are water-based newspaper inks more difficult to deink?

These inks are indeed far more difficult to deink due to the different composition of the vehicle. For this reason, the hubergroup has developed easily deinked, water-based newspaper inks, but these have so far not been put to use due to their higher price and the lack of statutory compulsion.

Can newspapers be composted?

Newspapers can be put on the compost without a second thought. Newsprint is also added to the compost material when composting organic wastes, in order to improve the C/N (carbon/nitrogen) ratio.

Is there such a thing as "eco" inks for newspaper printing?

The quotation marks in the question highlight the problem with such inks. Printing inks that are awarded the supplemental qualification "eco" (standing for ecologically sound or friendly) are basically always just inks in which modified vegetable oils have been used instead of mineral oils. The remaining constituents are nevertheless synthetic products, just like in "standard" inks. Ecological assessments carried out both as part of a Swedish study and for an expert opinion compiled by the Federal German Office for the Environment (UBA) on the topic of "Vegetable oils as a substitute for mineral oils" have revealed no clear advantage on the part of vegetable oils. That said, the benefit of resource conservation still does exist. Although vegetable-oil-based newspaper inks offer greater brilliancy and reduced smudging (the key word being "black fingers"), they are rarely used due to their high price.

What water endangerment categories are your newspaper inks assigned to?

The hubergroup's newspaper inks are classified in Water Endangerment Category 1 in line with German regulations.

What requirements result from this classification with respect to the prevention of water pollution when handling newspaper inks?

Due to the importance of this question and the extensive nature of the answer, please turn to section 49.1.04 entitled "Prevention of water pollution when handling newspaper inks" for comments and information.

The above questions touch on just a few key areas.

If you require further information, please don't hesitate to contact our Environmental Protection and Product Safety Department.

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