



ENVIRONMENTAL FAQ



Sustainable printing

1. How does HP encourage customers to reduce, reuse and recycle?

HP Indigo's environmental guidelines encompass practical suggestions for saving valuable resources. In addition to its technology, HP offers its customers tips for reducing the costs of printing. For example, HP encourages customers to:

Reduce emissions and waste common to analogue printing by moving short-run jobs from analogue to digital.

- Maximise the yield of press supplies
- Adopt sustainable business practices by using recycled papers and substrates
- Ensure proper, responsible waste disposal
- Recycle printed paper for responsible fibre conservation
- Share with their customers the benefits of on-demand and short-run printing
- Set office printer configurations to default duplex printing

2. How does the HP Indigo technology promote sustainable printing?

As the leader in digital production printing, HP Indigo is at the forefront of environmentally sustainable printing. Waste, time and energy are saved through a number of efficiencies with HP Indigo digital printing.

- Digital printing allows printing of only what is needed (no need to use additional paper and ink), when it is needed (avoiding storage and obsolescence) and where it is needed (avoid the costs and environmental impact of shipping printed products across long distances). Digital printing also allows marketers to increase returns with fewer printed pieces by incorporating direct marketing and variable data campaigns.

In addition, digital short run printing significantly reduces waste associated with make-ready and change-over in traditional printing operations.

3. Does HP Indigo design for sustainability?

HP Indigo presses are built to last; their robust design enables them to print many millions of impressions during their service life, and their components are designed for long lifespan, reducing frequency of spare part replacement. Special features are included for energy conservation, such as a built-in auto-standby and easy shutdown/power-up for nights and weekends.



4. How does HP Indigo technology compare to traditional lithography with respect to environmental impact?

There are many additional steps in traditional printing that take longer to execute to print the final job, including an increase in wastage and energy usage than there is in digital printing operations.

- **Avoid overruns and obsolescence:** Printers often print about 10% over required printing run to compensate for deficiencies in bindery and future customer inventory.
- **Conserve paper and ink:** variable data printing and personalisation allows for fewer printed pieces due to direct marketing which often yields higher return on invested dollars.
- **Avoiding the waste and other environmental impact of long runs in conventional printing:** Digital printing uses digital artwork and files (directly from a computer) without the need for printing plates photographic films and associated chemical waste, including chemical disposal, fume extraction and storage of previously printed plates and film.

5. Does HP Indigo have a Design for Environment Programme?

HP is committed to providing customers with inventive, high quality products and services that are designed with the environment in mind, and to conduct operations in an environmentally responsible manner. Design for Environment (DfE) is a key element of HP's global environmental strategy.

HP Indigo's DfE Programme entails:

- Aggressive environmental targets in press design
- Increased consumable lifespan

- Design using recyclable materials and design for recycling
- Supplier auditing
- Attention to environmentally responsible packaging
- End-of-Life programmes including take-back and reconditioned press sales

6. Can HP Indigo printing presses print on environmentally sustainable substrates? (Recycled, FSC certified, carbon-neutral, etc.)

Yes. HP Indigo printing presses commonly print on a variety of substrates certified by HP Indigo and environmental organisations. Highly sought after media with FSC, SFI and PEFC accreditations are readily available from many mills and merchants. In addition, products made with recycled fibre, wind energy and carbon neutral manufacturing processes are readily available and provide customers with sound media choices for their clients and the environment.

- For more information on Indigo certified suppliers please refer to the HP Indigo Media locator <http://h21021.www2.hp.com/medialocator/>. For more specific product information, please contact the suppliers directly.

7. Can the HP Indigo ElectroInk be used for printing on food packaging? For the pharmaceutical industry?

ElectroInk can be used for printing on the non-food-contact side of certain types of polymeric films. In fact, there are HP Indigo customers that print for both pharmaceutical and food industries. Indigo printing presses are used successfully to meet customers' requirements on a daily basis. Due to the varying requirements in each country and differences in regulations between industries, it is appropriate to verify with the brand owner who actually uses this printed material if there are specific rules that need to be addressed for these specific cases. Customers should also work with their own consultants and experts to ensure that their printing processes meet the applicable rules.

8. What types of emissions are released from the HP Indigo presses?

- During the printing process, volatile organic compounds (VOCs) are released from the inks used in the press. However, none of HP Indigo's inks or other supplies contain substances that are listed on the US Federal list of Hazardous Air Pollutants as established under Section 112 of the Federal Clean Air Act (42 USCA § 7412).
- The Indigo Press has an on-board solvent recapture system. Much of the emissions are captured in a cooling system for disposal or recycling.
- Ozone exposure levels in the workplace are subject to control and regulation across the world. HP Indigo presses produce ozone at low levels, generated by the scorotron and charge roller that charges the photoreceptor. In regular operation, ozone peak levels are found to be well below the international occupational health standard of 100ppb for an eight-hour exposure level. In HP Indigo presses, the ozone is captured by highly efficient charcoal absorber cartridges. The cartridges need to be replaced after one million impressions.
- Following the manufacturer's advice is essential for health and safety and environmental compliance, and users need to be aware of any and special local requirements.

9. Is any particulate matter from the inks released into the atmosphere when HP Indigo printing presses are operating?

Unlike xerographic presses, which use a dry printing process, HP Indigo presses use liquid inks in a process that reduces any of particulate matter from its inks.

10. Are there any listed air contaminants in ElectroInk?

There are no toxic air contaminants in HP ElectroInks as defined in the California Toxic Air Contaminants list or in the Federal Hazardous Air Pollutants list.

In addition,

- HP Indigo ElectroInk meet the requirements of the Nordic Swan ecolabel for use on printed matter. The Swan criteria include requirements as to chemicals, emission to air and water, and waste treatment.
- HP Indigo ElectroInks comply with the Stockholm Convention on Persistent Organic Pollutants.
- HP Indigo ElectroInks comply with the Montreal Protocol on Substances that Deplete the Ozone Layer.
- No California Proposition 65 ingredients are used in HP Indigo ElectroInks.

11. What recognised environmental, health and safety standards do the HP Indigo presses and supplies meet?

Each country establishes its own environmental health and safety requirements and determines their applicability to various types of equipment. There are certain safety standards which have become internationally known or accepted. HP places a high priority on meeting applicable safety standards for its products, for HP Indigo, those include the following:

- HP Indigo ElectroInk meet the requirements of the Nordic Swan ecolabel for use on printed matter. The Swan criteria include requirements as to chemicals, emission to air and water, and waste treatment.
- HP Indigo ElectroInks comply with the Stockholm Convention on Persistent Organic Pollutants.
- No chemicals requiring Prior Informed Consent under the Rotterdam Convention for use in International Trade are present in the ElectroInks.
- HP Indigo ElectroInks comply with the Montreal Protocol on Substances that Deplete the Ozone Layer.
- HP Indigo ElectroInks are not classified as Dangerous Goods under International Air Transportation Association Regulations.
- There are no air contaminants in HP ElectroInk as defined in the California Toxic Air Contaminants list.
- No California Proposition 65 ingredients are used in HP Indigo ElectroInks.
- Used ElectroInk cartridges are not classified as Hazardous Waste in the USA, including California.



12. Does ElectroInk contain heavy metals?

HP ElectroInk does not contain lead, cadmium, mercury or hexavalent chromium in a combined concentration exceeding 100 parts per million by weight of the ink in the dry state, based on the formulation of ElectroInk and information received from suppliers.

13. Where can I find a list of the HP Indigo MSDSs and what is their significance?

HP is committed to following an open policy of informing its customers of possible risks, however small, that may exist in the use of HP Products. As such, this hazard information for HP products are contained in product specific Material Safety Data Sheets (MSDS), which uses the 16-section format recommended by the American National Standards Institute (ANSI) Z400.1 and Directive 91/155/EEC of the European Union and in accordance with the Globally Harmonized System (GHS) classification criteria.

- The information in the MSDS documents describe what could fairly be referred to as a theoretical worst case scenario, and does not address the question of whether or not conditions necessary for that scenario to occur are ever likely to exist.

HP Indigo presses have been safety-approved by North American nationally recognised testing laboratories and EU competent bodies, and include numerous safety features to minimise risk of personal injury or damage. When operated in accordance with the operating instructions provided by HP, the HP Indigo presses are safe to use.

- HP Indigo MSDS documents can be found online at: <http://www.hp.com/hpinfo/globalcitizenship/>

[environment/productdata/iimdsuseng.html](http://www.hp.com/hpinfo/globalcitizenship/environment/productdata/iimdsuseng.html)

14. Why do HP's operator manual and MSDS recommend cautionary safety measures such as protection of eyes and hands?

HP is committed to following an open policy of informing its customers of the possible risks, however small, that may exist in the use of HP Products. Use of personal protective equipment is an accepted precaution and its provision is a regulatory requirement against accidental exposure. Such instructions should be read within the context that they have been presented.

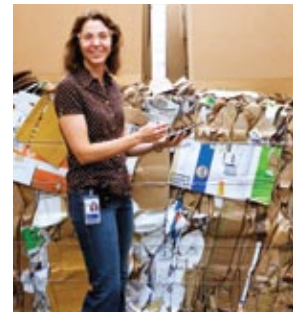
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15. How will the global economic slowdown affect environmental efforts?

Mark Hurd, Chairman and CEO, Hewlett-Packard Company declared recently that"

"Environmental responsibility is good business. We've reached the tipping point where the price and performance of IT are no longer compromised by being green, but are now enhanced by it".

This observation is not dependent upon changing economic conditions. Taking into account that HP is committed to the environment is part of our company culture and that it was a concern of our founders. It is clear that HP will continue to develop policies and initiatives that deliver increasingly high standards in all areas of environmental responsibility.



16. Where can I learn more about environmental aspects of the HP Indigo presses and supplies

There are numerous resources you can use, including the Environmental Sustainability with HP Indigo PowerPoint presentations, the HP Indigo Environmental white paper, and the HP Indigo Environmental brochure.

- Online: Learn more about HP Global Citizenship environmental efforts, please visit: <http://www.hp.com/hpinfo/globalcitizenship/environment/index.html>
- Email: contact us at environment.indigo@hp.com

Recycling & Waste

17. Are HP Indigo presses safe to operate?

Yes. HP Indigo prints are de-inkable using standard processes. De-inking is a key initial step in paper recycling where ink is separated from the paper fibres. De-inking tests of HP ElectroInk 4.0 results were in the same range as dry toner.

18. Can the HP Indigo prints be recycled?

Yes. Paper printed with HP ElectroInk can be recycled and used for a variety of applications. In fact, HP Indigo prints produced as part of the R&D and manufacturing process at HP Indigo facilities are sent to recycle every month.

19. What types of waste does the HP Indigo press produce?

HP Indigo printing presses generate several types of waste streams including ink cartridges, imaging oil, used blankets, and used PIPs (Photo Imaging Plates).

There are also several filters that are replaced from time to time. The quantities of waste are highly dependent upon the total print volume generated at different sites, and are calculated on a per case basis.

It is important to note that none of these waste streams are considered hazardous under Federal EPA regulations. Local regulations need to be considered when planning the removal of this waste stream and employment of a licenced hauler is strongly recommended.

20. How should one dispose of waste produced in the operating process on HP Indigo printing press?

Disposal of waste is regulated on a municipal, state and national level. Therefore, requirements may differ depending on the location in which each HP Indigo printing press is being operated.

A printing press user guide and site preparation instructions provide preliminary instructions on how to dispose of waste generated in a digital printing process.

- HP recommends taking a conservative approach to waste management. Consult with your local authorities and determine the correct manner in which to dispose of such waste.

21. Does HP have a take-back programme for used or end of life presses, depleted supplies and parts?

HP Indigo reuses or recycles various components from trade-in presses as well as field replaced components.

- HP Indigo reuses packaging from new presses and spare parts delivered at customer sites.



Operations

22. Are HP Indigo presses safe to operate?

Yes. HP is committed to providing customers with inventive, high quality products and services that are safe to operate.

HP adheres to recognised safety standards in these products that offers, and ensures that the required safety guidelines are included in all operating instructions of each of its products and components.

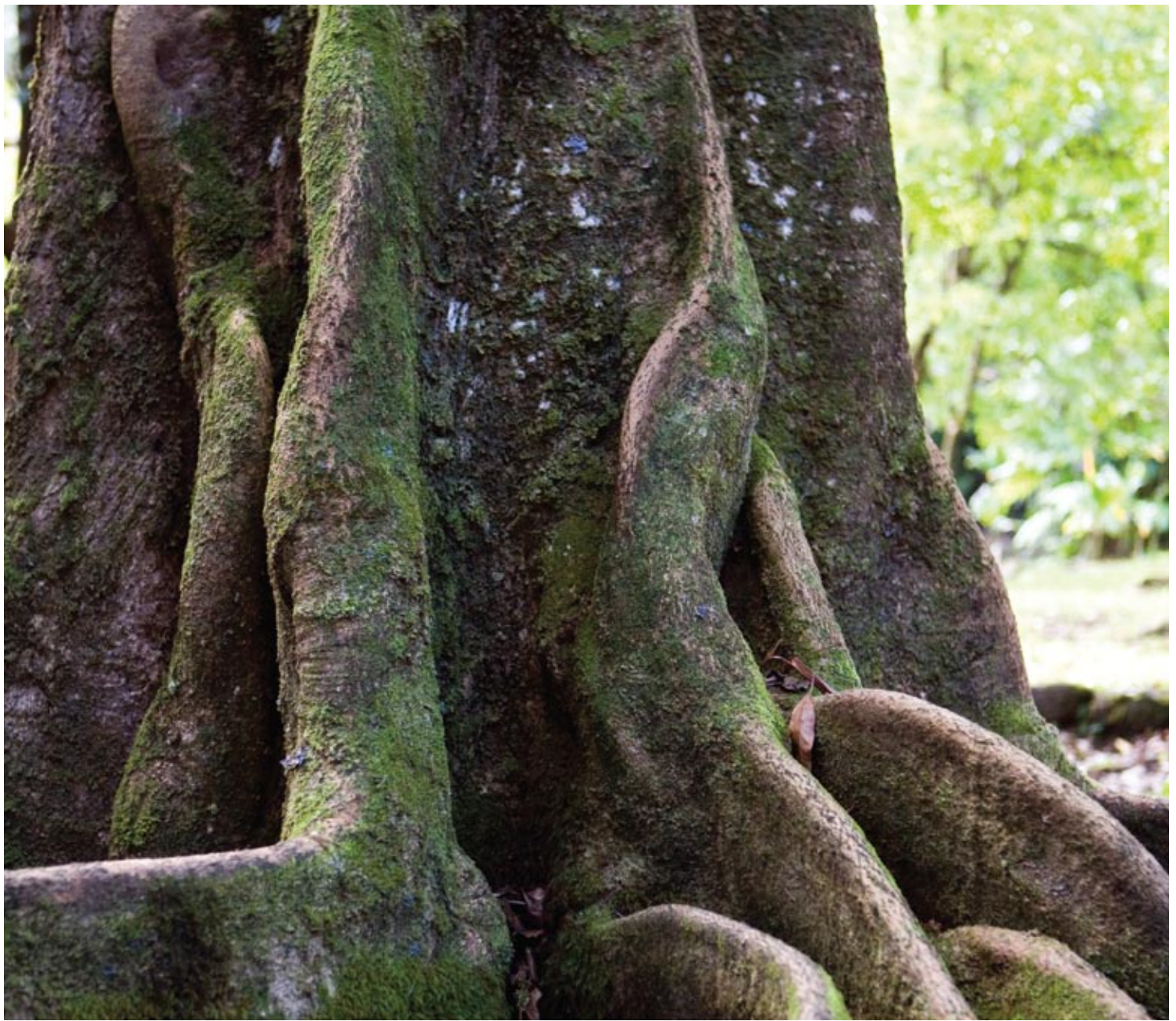
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23. How do I know what legal requirements apply to the operation of my HP Indigo press?

The operation of equipment such as HP Indigo presses is often regulated by national, state or municipal legislation/regulations. Much like regulations relating to the safety measures that need to be applied against fire hazards in buildings, which vary from country to country and even from city to city, the regulations that apply to the operation of the HP Indigo presses may vary depending on location.

- The Operating Instructions provided with your HP Indigo press provide the relevant factual information regarding the operation of the press. Each operator must determine what permit is required and which regulations apply in the jurisdiction where they do business.

Please consult with your local advisor regarding the legal requirements applicable to the operation of your HP Indigo press at the location of its installation by consulting the internet and/or phone book.

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