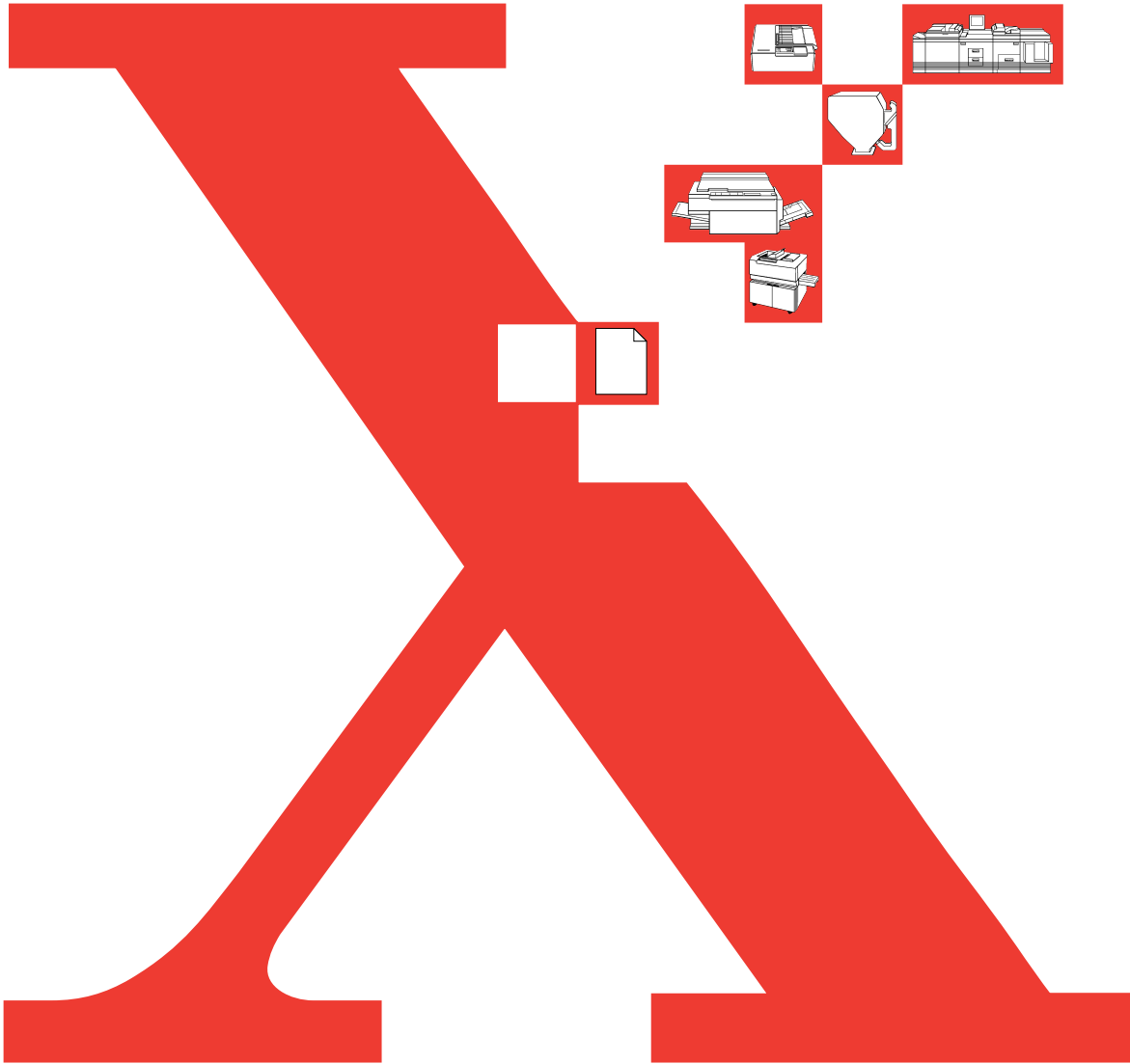


*Facts about
the Safety
of Xerox
Products*




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THE DOCUMENT COMPANY
XEROX

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The Document Company

In the modern office, the document is much more than a static tool. Whether in paper or electronic form, the document is a dynamic organism that breathes life into the business process. It is the glue that binds members of work groups together, enabling them to communicate ideas and information in unique and exciting ways.

Xerox helps customers produce, distribute and manage documents. Xerox also helps them work together better and more efficiently by providing a range of document solutions that includes traditional and engineering copiers, duplicators, laser printers, optical scanners, facsimile (fax) and multifunction machines, workstations, network systems, advanced office systems, software and supplies.

Xerox believes in the personal and business importance of the document and its continued growth as the lifeblood of business.

Xerox does more, knows more about, and cares more about the document than any other company. This is our competitive advantage.

Xerox will go wherever the document takes us. The company will continue to lead by providing innovative solutions to its customers' business problems.

The Business of Xerox

Xerox is a global company in the document processing market.

Our document processing activities encompass the designing, developing, manufacturing, marketing and servicing of a complete range of document processing products and systems that make office work more productive. Xerox copiers, duplicators, electronic printers, optical scanners, facsimile

machines, networks, multifunction publishing machines and related products, software and supplies are marketed in more than 130 countries.

General Policy

It is the policy of Xerox Corporation that all products and materials marketed worldwide meet the recognized standards for safety, health and environment, and to ensure that “good practice” is followed where no such standards exist or apply. In addition, Xerox products, materials, and practices comply with the appropriate governmental standards. In instances where standards of different severity apply under various jurisdictions, our usual practice is to comply with the strictest standards multinationally. The purpose of this policy is to ensure that Xerox products and materials do not constitute a risk to the health and safety of our customers, employees or the general public.

Overview

To ensure full compliance with the above policy, health and safety considerations are an essential element of the product and materials design and review process. Extensive system testing is conducted under a variety of simulated field and stress conditions to verify that all the health and safety requirements have been met. Some of these tests are conducted by our internal test groups while others are performed by external test organizations.

With regard to the materials used in Xerox products, we have historically performed appropriate acute toxicity tests (ingestion, inhalation, sensitization, etc.). When deemed necessary, results of longer term exposure tests are evaluated. With advances in the field of genetic toxicology, we have used a battery of tests for a number of years as a predictor of potential, longer term effects.

Summaries of the materials safety test results are published on *Material Safety Data Sheets (MSDSs)* which are supplied with initial product shipments and upon request.

In all of these activities, Xerox uses qualified personnel to perform the required studies. As developments warrant, external experts are consulted to provide advice and critique.

In any instances where new information raises a concern about the safety of a product or material, prompt corrective measures are taken. In the case of electrical or mechanical safety concern(s), where problems can be analyzed more rapidly, the recommended corrective actions are disseminated promptly to service representatives by *Critical Safety Bulletins*. In all cases, action is taken with health and safety being the first priority.

General Safety Practices

It is important to observe a few fundamental rules in order to ensure the safety of those involved with the use and care of complex electrically operated machines. The following list is offered for guidance.

- Machines must be sited according to the Xerox installation requirements publication. This should be checked if a machine is moved to a new location.
- Observe all caution and warning labels in order to avoid potentially hazardous conditions.
- Machines must be connected to a properly grounded electrical service outlet.
- Some covers are interlocked to ensure removal of hazardous conditions when covers are opened. Interlocks must not be bypassed or defeated.

- Covers or guards held in place by fasteners that require tools are not to be removed except by trained service personnel.
- Only Xerox-approved maintenance procedures and materials are to be used, both inside and outside the machine.
- If unusual noises, odors or smoke are noticed, the machine should be stopped immediately, disconnected from its power supply, and serviced before next use.
- Materials should be disposed of according to instructions provided on *MSDSs*.
- It is best to avoid staring at the light sources so that nuisance or discomfort effects are avoided.

Imaging Processes

XEROGRAPHY

In the traditional xerographic imaging process, an electrostatic charge is applied to a photoconductive layer composed of selenium, or alloys of selenium with other elements coated onto a metallic drum. Today, most copiers/duplicators use an improved technology based on a multilayer organic photoconductor. The photoconductor generally includes a small quantity of selenium and is coated onto a lightweight aluminum tube or polyester film base. Following light exposure from the document, the resultant latent image is developed with a finely divided electrostatic powder known as toner or dry imager. Generally the toner is supplied to the latent image in the form of a developer mixture, composed of large carrier with small toner particles adhering to it, and is transported to it by a cascading or magnetic conveying process. The toner adhering to the imaged areas is transferred electrostatically to the paper and is fused permanently to it by application of heat or heat and pressure. The residual toner on the photoconductor is removed, and the photoconductor is prepared for the next imaging cycle.

FACSIMILE

In facsimile reproduction, the document is scanned by light sources and the image is converted to an electronic form compatible with telephone communications. At the receiver, electro-optical systems decode and print the transmitted image via direct thermal, thermal transfer, xerographic or ink jet processes.

LASER PRINTING

In laser writing or printing, the image is first digitized into a series of very small dots (pixels) by either a computer or document scanner. The digitized image is then transferred onto the photoreceptor via a laser beam. The rest of the xerographic process is essentially conventional.

INK JET

In the ink jet imaging process, a stream of colored liquid ink is ejected dropwise through an electrical field to travel to a receiver sheet of plain paper.

LIQUID DEVELOPMENT

In liquid development, finely divided powder particles are suspended in a liquid hydrocarbon which is then brought into contact with the photoconductor. The powder is fixed to the paper or receiver by the evaporation of the liquid through the application of heat, or both heat and pressure. Generally, the other steps are the same as in conventional xerography.

IONOGRAPHY

In ionography, ions are deposited selectively on a dielectric surface that is subsequently developed and the image is simultaneously transferred and fixed onto a receiver sheet by the application of pressure.

Machine Design and Ergonomics/ Human Factors

Xerox policy requires that products meet safety standards at least as strict as those generally accepted by approval agencies and government regulations. A Product Safety Plan for each product program details the specific requirements.

Assessments are made for all possible hazards: electrical, mechanical, chemical, biological, radiation, heat emission, and noise. Possible interactions between hazards are also considered. Results of assessments must be satisfactory in all areas to permit shipment of the machine to the customer. In addition to these assessments, service procedures, service materials, special tools and the key operator's manual must all be approved prior to customer shipments. Minimum product space requirements are defined, to ensure proper machine performance and to provide adequate access for service operations. Xerox products are typically submitted to approval agencies such as Underwriters' Laboratories (UL), Canadian Standards Association (CSA), and British Standards Institute (BSI) so that their approvals and listings are obtained.

Ergonomics (or Human Factors) can be defined as "a field of study concerned with the problems and processes involved in designing things for effective human use and creating an environment suitable for human living and working." Xerox' human factors professionals participate in the design of all Xerox products to optimize the human interface.

It is important to recognize that operating any office equipment for extended periods can impose a somewhat fixed working posture which could lead to muscular strain and fatigue. A well-designed, adjustable work environment, well-balanced work tasks, and proper training are necessary to prevent subjective complaints and repetitive strain injuries.

Document Illumination

Where the xerographic process requires that documents be illuminated with high-intensity lamps, Xerox, with the help of expert consultants on the biological effects of bright lights, has developed maximum permissible exposure levels for incoherent light sources to ensure that operators are not harmfully exposed. The limit values are consistent with those listed in the Physical Agents section under light radiation of the ACGIH Threshold Limit Value (TLV) booklet. All products with illumination systems are assessed against these levels. Lamp systems are measured at the point of maximum possible exposure, and test results are assessed for all possible effects. Some lamp systems are interlocked with the platen cover to prevent any operator exposure due to the intensity of the light source. Staring at lamps can produce an afterimage, but this is of short duration and has no permanent effects. We recommend that platens be covered while making copies to minimize exposure and facilitate good copy quality.

Lasers

Xerox products containing lasers are designed and built to comply with governmental standards. Such standards have very strict safety requirements. Xerox products containing lasers are designed so that potentially harmful laser beams will not exit the machine. Covers and shields need not, and should not, be removed for customer maintenance. Covers that may be removed by Xerox service personnel are labeled to indicate potential laser hazards. There is no service mode that requires direct viewing of the laser beam or for which the beam exits the confines of the machine. Service personnel following established adjustment procedures are not exposed to potentially harmful laser beams. Products containing lasers do not represent a hazard to machine operators or bystanders.

Indoor Air Quality

Xerox Corporation is aware that our customers wish to maintain excellent indoor air quality in their workplace environment. All our machines are tested to ensure that we meet or better current standards or acceptable practices for emissions. For example, we measure ozone, organic volatiles, and particulates emitted from all xerographic products. Other emissions, such as arsenic, selenium, and formaldehyde are measured regularly when the material's usage makes it appropriate.

Xerox sets machine emission standards such that during normal operation, the area in which a machine operates will have air that is no more than one-tenth the Threshold Limit Value (TLV) or Xerox Exposure Limit (XEL) for all chemical emissions. Where no standard exists, such as for volatile organic compounds (VOCs), the Xerox safety organization sets limits that ensure new products comply with any anticipated regulations and that no emission component will exceed the one-tenth TLV or XEL.

Xerox makes every effort to ensure that its equipment does not emit odors into the workplace. However, since some chemicals have very low odor thresholds, people with sensitive sense of smell may sometimes detect faint odors, even though the concentration of the chemical is well below any that would present a health concern. When such odors are perceived as being objectionable, every effort is made to eliminate them.

Materials Safety Evaluation

All materials used in our various products comply with applicable external regulatory requirements, as well as more stringent Xerox internal safety requirements. During the risk or safety assessment of any material/product, both its inherent properties (potential hazards) and its availability to customers and service personnel (exposures) are considered.

The various materials used in imaging processes are evaluated for their toxic potential by reviewing published technical data or acquiring the necessary information through responsible testing. The safety evaluation process considers potential short- and long-term effects, as well as reproductive impact. Although acute toxicity determinations are no longer conducted for most Xerox toners, any testing judged necessary is performed by oral, dermal or inhalation routes. The potential for eye and skin irritation is also determined. Human skin patch testing is considered to be definitive and animals are used only when required as a prerequisite to the human tests. When deemed necessary, longer term exposures, with the appropriate route of administration and dosage, are also evaluated.

We also utilize various bacterial and mammalian cell type tests in the safety evaluation of materials. With the rapid advances made in the field of genetic toxicology, the most suitable and validated assays are used as predictors of potential genotoxic effects.

All tests are performed in accordance with the rules of good laboratory practice, and the results are documented and placed into the health and safety archives. Further, all laboratories used in safety testing are accredited by, or meet the standards of, the American Association for Accreditation of Laboratory Animal Care. Responsible use and humane treatment of animals are basic requirements of sound scientific research and the generation of valid test data. Our safety testing activities are in full compliance with these basic principles. Summaries of the test results are published under the Toxicology and Health Information heading of MSDS, and the actual detailed test reports are available to the appropriate health and safety regulatory agencies.

In all of the above activities, Xerox has used qualified internal or external personnel to perform the required studies. As a normal part of the safety assessment process, external experts have been consulted to provide advice and critique.

Toners and Developers

Xerox toners are fine powders composed of plastics, colorants, and small quantities of functional additives. Depending on the specific machine application, either styrene-acrylic, styrene-butadiene or polyester polymers are the major component of the toner (Xerox does not use epoxy polymers in toners). In black toners, several different specialty grade carbon blacks are used as colorant, while for color copying various dyes or pigments are employed. The level of polycyclic aromatic hydrocarbon (PAH) trace impurities in the carbon black is strictly controlled and is exceedingly low. In some of the toners, after-treated carbon blacks are used, therefore, the level of PAH impurities is even lower. During the toner manufacturing process, the carbon black/colorant and polymer are melt mixed and, thereby, most of the colorant becomes encapsulated by the polymer.

Under normal operating conditions, the toners are entirely stable and no significant amount of decomposition takes place. They merely flow and adhere to the paper upon the application of heat, or heat and pressure, depending upon the specific machine.

None of the Xerox toners or developers are mutagenic or display a mutagenic signal in the Ames Salmonella Mutagenicity Assay.

Investigations in 1978-80 detected a mutagenic signal due to a trace impurity in some Xerox toners. Shortly thereafter, the level of this impurity was reduced to non-detectable levels as a result of improved process control and materials analysis by Xerox and its vendor.

Two-component developers are composed of a carrier material and toner. Xerox carriers are based on special grades of sand, glass, steel, or ferrite types of materials. They are generally coated with a small amount of special polymer to achieve the desired functional behavior in the copier or duplicator.

Toner Inhalation Study

Xerox Corporation conducted a comprehensive inhalation toxicology investigation of xerographic toner. We took this action because of the lack of knowledge regarding the biological effects of long-term inhalation of toners or other closely related materials, such as polymer dusts. Since toners were introduced into wide commercial use by Xerox, we felt an ethical responsibility to understand their behavior.

In this investigation, groups of two species of rodents were exposed to three levels of a test toner for the majority of their life span. The special test toner was about 5-10 times more respirable (capable of reaching the deep lung) than commercially available Xerox toner. This test toner was used to comply with the strict National Toxicology Program test protocols; it would not function properly in Xerox equipment. Animal health was monitored while the rodents were alive. Following death, their tissues were examined to determine the effects, if any, of the exposure to the test toner.

The results of the inhalation study in both rodent species showed no effects of exposure on survival and causes of death. Similarly there were no effects of toner inhalation on body weight gain and food consumption. The clinical and blood chemistry parameters were essentially unchanged. There was no evidence for systemic or upper respiratory system toxicity. All of the observed changes were restricted to the lungs and associated lymph nodes. There was no change in lung tumor frequency when compared to both concurrent and historical control data.

Generally, the lung changes were more pronounced in rats than in hamsters. There were no changes at the low exposure level, which is the most relevant level with respect to potential human exposures. The lung changes at the high exposure level were: (1) decrease in lung

clearance, (2) increase in lung retention of test toner, (3) increase in lung weight, (4) chronic inflammation, (5) decrease in pulmonary function, in both volume and elasticity of the lung, (6) slight to moderate degree of fibrosis (scar tissue formation) in all animals, (7) histopathological alterations, and (8) enlarged and pigmented lymph nodes. At the middle exposure level, fewer types and smaller magnitude of lung changes were observed.

The various lung changes observed at the high and, to a lesser extent, middle exposure levels to toner were identical to the characteristic signs of lung overloading. The term “lung overloading” represents a series of generic responses to the presence of large quantities of benign dusts retained for extended time periods in the lungs. This interpretation is likely to be applicable to other toners and relatively nontoxic, respirable and insoluble dusts.

The results of the investigation should not be a cause for concern. Toner exposures during the operation or servicing of Xerox equipment are well below the lowest exposure or “no effect” level in the rat study.

The results of the study have been communicated to the appropriate regulatory authorities. As a part of Xerox’ ongoing Hazard Communication Program, a summary of these studies has been added to the MSDSs for all toners and developers under Section III “Toxicology and Health Information.”

Photoreceptors

A xerographic photoreceptor is a multilayer device in which photoconducting layers are very tightly bonded to a substrate that provides mechanical stability. For rigid applications, the substrate is composed of a metal or metallic alloy, generally an aluminum drum or tube. Flexibility is provided by incorporating a substrate of either an electroformed nickel belt or a polyester film base.

Most current photoreceptors use a novel, organic photoconductor and may contain a very small amount of selenium. These imaging systems have enhanced blue copyability and more readily enable the incorporation of special lasers and digital xerography.

The photoconductors used in the older Xerox products are principally composed of amorphous selenium. Some of them use a selenium alloy which contains a very low level of arsenic (less than 0.5%), while others use an alloy based on arsenic triselenide. The photoreceptor of some drum products also contains tellurium.

No Xerox photoreceptor has ever contained the chemical, 2,4,7-trinitrofluorenone (TNF).

Inks and Ribbons

In some imaging applications such as plotters, printers, and memorywriters, various inks or ribbons may be used. The inks are generally based on a paraffinic solvent and contain various colorants and dispersing agents. Black inks contain specialty grade carbon blacks while colored inks contain dyes or pigments. Similarly, the various colored ribbons contain dyes, pigments or high purity carbon black in a wax matrix coated onto a polyester or fabric background. These materials are subject to the same rigorous safety evaluation as other imaging materials.

Materials Emissions

As part of the normal operation of copiers and duplicators, very small quantities (in most cases near the limit of detection) of several materials become airborne and may be emitted from the equipment. During normal operation, ozone is generated by the corona discharge of various corotrons and extremely small quantities of the surface of the photoreceptor may be abraded. In

addition, the various operations involving paper and toner result in some of the paper dust and toner becoming airborne. Most of these materials are contained within the xerographic equipment, in filters, traps, etc., but a very low level is emitted from the machine. Summarized in Table I are the results of typical, time-weighted average airborne concentrations of ozone, dust, fuser oil, arsenic, selenium and tellurium measured at the operator position of six Xerox copier/duplicators. The dust measurements refer to "total dust," which is composed primarily of paper dust and small quantities of toner, usually less than 10% of the total dust. The values listed are based on measurements made in a test chamber having very limited air turnover. In all of the calculations, it is assumed that the recommended machine placement requirements are observed. Due to the conservative nature of the test procedures, the values listed should be greater than those that an individual would be exposed to operating the equipment for eight hours a day. The emission characteristics of each Xerox machine are summarized in its *Product Safety Data Sheet (PSDS)*.

A comparison of the measured values with the applicable U.S. standards shows all of them to be well within the required limits. Generally, the measured values for arsenic are 100–1,000 times less than the strictest U.S. standard; while for selenium, they range from 1,000–10,000 times less than the U.S. standard. Frequently, the actual measurements are at or near the limit of detection. As part of our normal development activities, Xerox strives to keep these emissions to a minimum, consistent with safe and reliable operation of the equipment.

Ozone

In xerographic devices, ozone is produced primarily by the corona discharge of the various corotrons. Ultraviolet emissions from document

exposure lamps are so low that the ozone generated by this means is insignificant. Some Xerox equipment does require ozone limiting devices. The Xerox Ozone Management Program requires that machines situated in locations that do not meet either space or environmental (temperature and humidity) requirements must be equipped with a filter to reduce ozone to an acceptable level. Some machines are equipped with ozone filters at the factory while others may be retrofitted with such a device at the placement site, or the emission of ozone is controlled via ducting. While high levels of ozone are toxic, ozone is unstable and changes rapidly into ordinary oxygen. All newer Xerox products, operating normally over a working day under the minimum specified environmental conditions, meet the Xerox limit of 0.02 parts per million (ppm) (compared to the worldwide standard of 0.1 ppm) time-weighted average concentration for an 8-hour workday. The *Facts About Ozone*, Part #610P64655, publication is available upon request (800-828-6571).

Electromagnetic Compliance (EMC)

Xerox products do not generate electromagnetic emissions (EME) which would endanger the functioning of radio navigation or other safety services, or seriously interfere with radio communication services. In this regard, Xerox products comply with all governmental EME limitation requirements. Compliance is verified by appropriate product testing prior to placement in the marketplace.

Beginning January 1, 1996, all Xerox equipment sold in the European Community (EC) must meet new electromagnetic immunity (EMI) standards. These standards ensure that the machine is protected from electromagnetic waves from other equipment (radiated immunity), electrostatic discharges (ESD), and surges in the incoming current (fast transients).

Visual display terminals (VDTs) associated with Xerox products are designed and tested to ensure compliance with radiation protection standards. Measurements for X-ray radiation demonstrate no difference from normal background levels; and ultraviolet, infrared and visible radiation levels are thousands of times lower than any standard. At the electromagnetic field levels measured, there are no demonstrated human health risks from any Xerox equipment.

Xerox Corporation has also marketed terminals that consider the various aspects of design associated with the human interface (e.g., high quality screen detail, detachable keyboard, etc.). The use of visual display equipment in the office environment requires attention to lighting, glare control, flexibility of operator working surface, operator chair, and control of temperature in the office environment.

Noise

Xerox products do not produce noise levels that would be expected to damage human hearing. A mandatory noise source sound pressure emission limit of 82 dB(A) has been established to ensure that Xerox products may be operated continuously without the need for protective equipment to preclude hearing damage. Additionally, other significantly lower noise limits are recommended that should maintain reasonable comfort in environments used primarily for mental undertakings (52 dB(A)) or for mechanized office and comparable activities (67 dB(A)). Compliance with Xerox' audible noise standard is determined by anechoic chamber testing of machines during the developmental and initial production phases.

Some European and Nordic organizations (e.g. Blue Angel & White Swan) have created performance specifications, including audible noise, for certain classes of copiers. When a manufacturer's product meets the full set of

specifications they are permitted to use the corresponding "seal of approval" to indicate conformance. Xerox will design machines to these specifications, where it is deemed appropriate, providing additional benefits to our customers.

Energy Conservation

Xerox Corporation is among the industry leaders working toward new and improved environmental standards.

A very early, but significant, energy-saving process was introduced by Xerox in 1970 as automatic two-sided (auto-duplex) copying. Since making a sheet of copy paper consumes three to ten times the energy required to put a xerographic image on it, considerable energy, as well as paper, is saved by two-sided copying.

Within the office environment, reduced energy consumption serves the customer through lower operating costs and less heat pollution. It serves the manufacturer by enabling the utilization of lower power componentry. To these ends, all new Xerox machines incorporate an energy saver mode or automatic shutoff into a low power consumption state, where appropriate. The U.S. EPA has established a voluntary program called ENERGY STAR (for certification of energy efficient printers, copiers, fax, and multifunction devices. A significant number of new Xerox products are approved as ENERGY STAR products and Xerox is continuing to invest in engineering design and technology to further improve the energy efficiency of our products. Furthermore, Xerox is working with the EPA, Department of Energy, and standards-making bodies for industry-wide establishment of new energy efficiency guidelines.

ENERGY STAR® is a U.S. registered mark.

Product Service and Maintenance

All service procedures and materials are reviewed and approved by Xerox' environmental health and safety personnel prior to field usage. This review involves an assessment and control of potential mechanical, electrical, chemical and physical agents (laser, noise, etc.) hazards to minimize the safety and health exposure of Xerox employees and customers.

Field usage of these procedures and materials is monitored and modifications are made, as appropriate, to maximize performance. Modifications may take the form of product retrofits, warning labels, special bulletins, etc.

All potential employee or customer exposures to chemical and physical agents are evaluated and measured during product development stages and verified under normal product usage conditions.

MSDSs are available upon request for all service materials, to identify any hazards they may present and communicate precautions necessary for their safe use.

Xerox Chemical and Physical Agent Exposure Limits

Xerox takes a prudent and responsible position on potential health risks to its employees and customers. Accordingly, Xerox Exposure Limits (XEL), internal company exposure limits for chemical or physical agents, may be established. XELs are more stringent than external consensus or regulatory limits. As required by law, both applicable XELs and external exposure limits are shown on *MSDSs*.

Safety Data Sheets

Xerox Corporation prepares summaries of the safety and health information for its products in the form of Data Sheets.

Product Safety Data Sheets (PSDSs) contain information about the mechanical, electrical, and environmental requirements of our machines, as well as their emissions into the surrounding environment.

Material Safety Data Sheets (MSDSs) provide information on any hazards, and the safe use of our products that may be classified as chemicals. They also contain storage, shipping, and disposal instructions.

Our data sheets are available upon request and, in accordance with applicable governmental regulations, are provided to customers in the U.S. with the initial shipment of product or material. Our *MSDSs* have also been filed with the Chemical Control Boards (or equivalent) in the Scandinavian countries.

These documents are updated periodically to reflect new information. The revised *MSDSs* are provided upon request (toll free: 800-828-6571; or internet: www.xerox.com/environment.html, or E-Mail: xerox.ehs@mc.usa.xerox.com).

Survey of Health Information

Xerox Corporation has an assessment program in place for its manufacturing and service employees. It is designed to detect any significant health problems that might be associated with their work environment.

A computerized information system enables tracking of employee exposure and biological monitoring data to detect health risks/effects that might be related to the workplace.

Xerox Corporation will continue to use its health and safety program to ensure that any statement made regarding the health of its work force has sound scientific basis and understanding.

Disposal of Spent Materials

Proper disposal of waste materials minimizes environmental impact and promotes public health and welfare. Xerox has developed and implemented an environmental management program by providing identification of hazardous waste materials for proper disposal and encouraging recycling or reclaiming of waste products. All materials that are used in the various imaging processes are evaluated against the following criteria: environmental toxicity and biodegradability, ignitability, corrosivity, and reactivity. The *MSDSs* contain a section on Spill and Disposal that delineates the procedures to follow. Some of the more common materials are detailed below.

PHOTORECEPTORS

Used or damaged Xerox photoreceptors containing arsenic and selenium should be returned to Xerox Corporation or the supplier for disposition. If they are not returned to Xerox, state and local laws regarding disposal of this material must be followed. Under current U.S. federal and state regulations, the photoreceptors are not classified as hazardous waste unless otherwise advised by Xerox. However, for safety considerations, if the photoreceptor is not returned to Xerox, we recommend that it be disposed of in a chemical waste landfill. The organic photoreceptors used in our new machines have met all the criteria to be classified nonhazardous and may be disposed of casually with normal office refuse.

TONER

All Xerox dry toners have been tested against the criteria named above. Landfilling of the material is generally recommended along with normal office refuse. Xerox recommends that caution be taken in the incineration of toners, as dust clouds may be explosive.

DEVELOPER

Developer also meets all criteria for classification as nonhazardous and may be disposed of with normal office refuse, unless specifically denoted on the *MSDS*.

SERVICE MATERIALS

MSDSs have been formulated for each of the service materials produced by Xerox. These materials have also been evaluated against hazardous waste criteria to determine proper disposal. If the waste materials are classified hazardous and small quantity generator exemptions do not apply, applicable governmental regulations must be observed for proper disposition.

For any questions concerning disposal of Xerox materials, review *MSDSs* and observe all applicable governmental regulations.

Summary

It is a fundamental principle of Xerox Corporation to ensure that its products are safe and do not in any way represent a concern to its customers or employees. We trust that the information presented in this booklet demonstrates our commitment to safety. If you would like additional information on the above, or any other aspect of environment, health and safety of Xerox products, please visit the Xerox Environment, Health & Safety website: www.xerox.com/environment.html or contact: Customer Environment, Health, & Safety Support, Xerox Corporation, 800 Salt Road, 843-16S, Webster, NY 14580; Telephone 800-828-6571, or E-Mail: xerox.ehs@mc.usa.xerox.com.

August, 1998

Table 1

Typical Airborne Concentrations of Materials at the Operator Position of Various Xerox Equipment^(a)

Substance Concentration	PEL ^(b)	Low Volume		Mid Volume		High Volume	
		Xerox XC830	Xerox 214DC	Xerox 5355	Xerox DC220 DC230	Xerox DT6135	Xerox DL5690
Ozone ppm ^(c)	0.10	0.006	0.008	0.007	0.009	0.002	0.002
Dust^(f) mg/m ^{3(d)}	15 ^(g) 5 ^(h)	<0.004	0.003	0.050	<0.004	0.010	0.030
Fuser (Silicone) Oil mg/m ^{3(d)}	N.A. ^(e)	<0.004	N.A. ^(e)	N.M. ⁽ⁱ⁾	N.A. ^(e)	0.026	0.026
Arsenic mg/m ^{3(d)}	0.010	N.A. ^(e)	N.A. ^(e)	<0.00001	N.A. ^(e)	N.A. ^(e)	N.A. ^(e)
Selenium mg/m ^{3(d)}	0.200	N.A. ^(e)	N.A. ^(e)	<0.00001	N.A. ^(e)	N.A. ^(e)	N.A. ^(e)
Tellurium mg/m ^{3(d)}	0.100	N.A. ^(e)	N.A. ^(e)	<0.00001	N.A. ^(e)	N.A. ^(e)	N.A. ^(e)

(a) Measured in 1,000 cubic foot chamber, continuous usage, and 0.5–1 air changes per hour.

(b) OSHA Permissible Exposure Limit (PEL)—The maximum permissible exposure an employee may experience from airborne substances averaged over an eight-hour period of time as mandated by OSHA.

(c) ppm—parts per million; at minimum Xerox siting requirements, high daily copy volume and natural ventilation.

(d) mg/m³—milligrams per cubic meter.

(e) Not applicable.

(f) Total dust measurements. Composition is primarily paper dust with some toner dust (<10%).

(g) Total dust.

(h) Respirable dust.

(i) Not Measured.