



P E N T A

Penta Poles

Preferred by Linemen
and Utilities for more
than 60 years



Penta is the preservative of choice for wood utility poles for more than 60 years. No other alternative can match penta's 60-year track record of proven performance, durability, safety and environmental sustainability.

Linemen prefer penta-treated poles because they are easy to work with and they are safe to work on. If linemen need to climb a penta pole, they can quickly attach gaffs and climb without delay. Penta's flexibility makes them less susceptible to ice and windstorm breakage. And penta poles pose significantly less risk of electrocution because they are not as conductive as non-wood poles.

Penta's "linemen friendly" characteristics are well established throughout the industry. That's why penta poles are chosen for pole events at the annual International Lineman's Rodeo.

Penta is the most popular pole preservative among utilities because penta poles stay in service for decades, are easy to maintain, are in ready supply and are priced competitively.

Utilities have come to rely on penta as a wood preservative that has a history of performance and safety...and a bright future of manufacturer commitment to product quality and availability.

Penta poles stand tall in all conditions Wind, rain, ice, fire, insects and fungi...Penta helps utility poles resist damage from all of these conditions.

- Penta's flexibility lowers the chances of ice and windstorm breakage
- Penta's moisture resistance properties reduce checking and pole twist
- Penta poles resist undetected burning (afterglow) when exposed to grass or brush fires, and
- Penta repels termites and other wood-eating insects.

Penta poles reduce long-term costs Competitively priced, penta poles' true value is in the cost savings they produce throughout their lifespan.

Savings start at delivery. Unloading penta poles is a fast and smooth operation that can be accomplished with readily available equipment. Specialized slings or machinery are not required. Once unloaded, poles easily stack in space-saving piles. There's no need to find extra yard space or purchase specialized racks.

Penta poles do not require special installation equipment. Ongoing maintenance is simple and can be performed by trained utility personnel or outside contractors.

Penta's preservative characteristics ensure that poles typically last 40 years or longer. In fact, penta poles' replacement rate averages less than four percent per decade with periodic maintenance, according to in-service records from several utility companies.

Even after they are removed from service, penta poles still provide a long-term cost benefit because they can be re-used, recycled or safely disposed of in landfills.

Penta...thoroughly tested for safety and environmental quality Penta has a 60-plus year track record of environmental safety.

Studies show that most penta originally used to treat a utility pole is still in the wood after 25 years. Numerous scientific studies conducted over many years demonstrate that the trace amounts of penta that are emitted to the environment do not present a health or environmental risk.

To safeguard workers and consumers, as well as provide ongoing product quality assurance, penta and other major wood preservatives periodically undergo a re-registration process with the EPA. To develop the state-of-the-art data required for the EPA's most recent re-registration process, penta manufacturers spent millions of dollars developing numerous toxicological studies and risk assessments by leading experts in the fields of toxicology, environmental fate and occupational exposure.

In every case, using highly conservative assumptions, the latest scientific data show that penta poles do not pose significant risks to people, wildlife, aquatic life, or the environment.

Penta...safe and effective when used properly Numerous scientific studies and a 60-year history of effective use demonstrate that penta does not cause adverse health effects when properly used.



With proper application, handling and use, exposures to penta among wood treaters, linemen and others who work with penta are low – typically far below levels at which test animals have shown any toxic effects – and well within safety margins.

Penta manufacturers are committed to the future Penta manufacturers continue to improve the environmental performance of their products, while maintaining the highest level of cost-effective, in-service performance.



Over the years, penta manufacturers have worked with EPA to make many changes that improve penta's safety. For example, penta manufacturers responded positively to the EPA's review of penta in the mid-1980's by narrowing the use to the industrial market, and reducing the levels of microcontaminants in the product.

Penta manufacturers continuously seek new ways to improve the purity of their product. As a result of manufacturing process improvements, today's penta poles have 65 percent less dioxin on a TEQ basis than poles produced in the mid-1980s. ("TEQ" denotes "toxic equivalent," an internationally recognized description of the relative toxicity of dioxins.) Penta manufacturers are working to find ways to produce penta with even fewer dioxins.

Penta poles ... easy to reuse and recycle Because they are not a hazardous waste, penta poles can be reused and recycled in a number of ways, such as fence posts and farm lighting. Poles can also be remanufactured and re-used as utility poles. Industry data indicates that nearly 70 percent of out-of-service poles are re-used.



Penta poles can also be burned for energy recovery in combustion units and industrial boilers that are permitted to burn penta-treated wood because penta does not contain toxic metals. This type of burning results in almost complete destruction of the penta, with dioxin/furan emissions comparable to that from ordinary particleboard.

If re-use or energy recovery options are not available, penta can be safely disposed of in landfills.

Penta poles ... the responsible environmental choice Penta is not a significant source of emissions or pollution when in-service. When taken out of service, most poles are re-used and kept out of the waste stream. Poles that are landfilled leach at levels that are far below EPA levels of concern.



The use of penta treated poles contributes to the preservation of natural resources and wildlife. Treated wood poles save roughly 32 million barrels of oil per year in saved energy costs related to production, compared to alternative pole materials. Penta's in-service life span of more than 40 years mitigates the need for frequent replacement, thereby helping preserve valuable forestland. Penta poles' low conductivity relative to non-wood poles lessens the risk of electrocution to large birds, such as eagles and hawks.

A Cost-Effective Choice

Penta is a highly economical choice for preserving wood, particularly over the long-term. According to an independent analysis conducted by Engineering Data Management¹, treated wood is the most cost-effective option for utility poles, both in terms of initial costs as well as total life-cycle costs.

Of the preservatives available for treating wood, only penta is created from two basic and widely available chemicals: phenol and chlorine. This makes penta a commodity product, with stable pricing, reliable supplies and a track record of use for more than 60 years. Time and again, penta pole production has met emergency demand caused by natural disasters, such as hurricanes, ice storms and tornados.

What else makes penta such a cost-effective choice for utility poles? A number of factors:

Penta poles have a long useful life.

Once installed, penta poles typically last 40 years or longer because of penta's ability to resist damage from decay, fungi, moisture and brush fires.

Penta poles' replacement rate averages less than four percent per decade with periodic maintenance, according to in-service records from several utility companies.

Penta repels termites and other wood-destroying insects, minimizing maintenance frequency.

Penta poles' re-use reduces disposal costs.

Because they are not considered to be a hazardous waste, penta poles can be reused and recycled in a number of ways, such as fence posts and farm lighting.

More Cost Advantages of Penta Poles

Unloading and Storage

Unloading penta poles is a fast and smooth operation that typically does not require special slings. Once unloaded, poles can be stacked in space-saving piles. Dents and surface nicks that might compromise other materials do not harm penta poles, nor require repairs. Poles made from steel, concrete and plastic take an estimated 30 percent more time to unload, according to a study conducted by the Western Wood Preservers Institute.

Installation Penta poles do not require special installation equipment. If they need to be moved after installation, they can be relocated and reused without special equipment or transportation.

Maintenance Most maintenance is simple and can be performed by trained utility personnel or outside contractors. Drilling, reframing, and adding or changing hardware can be performed promptly on the spot. Normally, there is no need to remove the pole from service to do a treatment or modification. If linemen need to climb a penta pole, they can quickly attach gaffs and climb without delay – working on more poles, more quickly.



A Cost-Effective Choice

Penta can be burned for energy recovery in combustion units and industrial boilers that are permitted to burn penta-treated wood because penta does not contain toxic metals, unlike some other wood preservatives. This results in almost complete destruction of the penta, with dioxin/furan emissions comparable to that from ordinary particleboard.

Penta poles can be remanufactured and reused as utility poles.

Penta helps poles resist breakage and damage from the elements, minimizing the need for emergency repairs or replacements.

Penta poles are flexible, which helps minimize and reduce damage during ice and windstorms.

Penta's ability to resist moisture and repel water minimizes pole checking and twist, and corrosion of pole hardware.

Penta does not significantly change pole electrical conductivity, and therefore, does not require special insulators.

Penta poles resist undetected burning (afterglow) when exposed to grass or brush fires.

Penta poles are easy to install and maintain.

Penta poles are easy to handle, do not damage easily and rarely require special handling or equipment for installation or maintenance.

Their ease of use allows crews to handle more poles, more quickly, thereby increasing crew productivity.

Penta Works on Moist and Hard Woods

As an oil-borne preservative, penta penetrates all treatable wood species effectively, saving costs for Western utilities by enabling their use of local trees, such as the Douglas fir and red cedar, for utility poles. Some water-borne preservatives have difficulty effectively penetrating certain wood varieties. This forces utilities to either pay to transport poles made from wood that accepts water-borne wood preservatives, or perform labor-intensive "through boring" to ensure preservative saturation.



1 "Lifecycle Study Proves Wood is the Best Investment,"
Wood Pole Newsletter,
Western Wood Preservers
Institute, Fall 1997.

Penta & the Environment

The Facts

Penta has a 60-plus year track record of environmental safety and proven performance. When used and disposed of properly, penta-treated utility poles are a wise environmental choice.

Penta-treated wood has a number of important environmental advantages:

Penta is biodegradable. Studies show that sunlight and bacteria break down trace amounts of penta that may enter the soil, water or air, unlike the metals that can leach into surrounding soil from other types of treated wood.

Penta's low vapor pressure and high absorption quality enables most of the chemical to stay inside the wood. Studies show that most penta is still in the wood after 25 years. In addition, penta's low water solubility means that any trace amounts of penta that may enter the soil near a pole will not travel very far.

Penta does not persist or accumulate in the environment. According to recent data submitted to the U.S. Environmental Protection Agency (EPA) as part of penta's re-registration process, penta has a half-life of 14 to 63 days in soil and 5 to 34 days in water. In the atmosphere, penta's reported half-life ranges from 0.75 to 1.0 hours.

Treated wood poles save roughly 32 million barrels of oil per year in saved energy costs related to production, compared to alternative pole materials.

Penta's in-service life span of more than 40 years mitigates the need for frequent replacement, thereby helping preserve valuable forest resources.

Penta poles significantly lessen the risk of electrocution to linemen and wildlife because they are not as conductive as some other non-wood poles.

continued

Penta is Thoroughly Tested

As a pesticide, the EPA requires penta to undergo regular in-depth testing and analysis. To develop the state-of-the-art data required for the EPA's most recent re-registration process, penta manufacturers spent millions of dollars developing numerous toxicological studies and risk assessments by leading experts in the fields of toxicology, environmental fate and occupational exposure. In every case, using highly conservative assumptions, the latest scientific data show that penta poles do not pose significant risks to people, wildlife, aquatic life, or the environment.



Penta & the Environment

Penta retains the natural appearance of the wood that it is treating. Consumers prefer the “tree like” look of penta poles to the intrusive visual impact of non-wood poles.

Penta manufacturers are committed to continuously improving the environmental performance of their products, while maintaining the highest level of cost-effective, in-service performance. Over the past two decades, micro-contaminants, including dioxins, in penta have been reduced dramatically, and manufacturers continue to seek new, practical ways to produce penta of even higher purity.

Penta Poles. Durable, Reusable and Recyclable

Penta-treated utility poles have a proven record of all-weather durability and typically last more than 40 years. Penta helps reduce waste because it gives poles lasting properties, such as:

Flexibility. Penta poles are less susceptible than alternatives to handling damage, and ice or windstorm breakage.

Moisture resistance. Penta treatment reduces checking and pole twist.

Resistance to insect damage. Penta repels termites and other wood-eating insects.

Non-corrosive. Penta is not corrosive to pole hardware.

Fire resistance. Penta poles display minimal damage when exposed to grass or brush fires. In fact, penta poles do not smolder and often self-extinguish after a fire.



Even after they are removed from service, penta poles still have a useful life. Because they are not considered to be a hazardous waste, penta poles can be reused and recycled in a number of ways, such as fence posts, lampposts and supports for vehicle shelters. They also can be burned for energy in combustion units and industrial boilers that are allowed to burn treated wood because penta does not contain any metals, unlike some other wood preservatives.



Environmental Emissions of Penta

The Facts

Penta treated poles are not a significant source of emissions. When applied properly, penta stays in treated wood for many years. However, gravitational forces and changes in temperature, atmospheric pressure and humidity may cause trace amounts of penta to migrate from the wood into the immediate surrounding area.

Numerous scientific studies conducted over many years demonstrate that the trace amounts of penta that are emitted to the environment do not present a health or environmental risk.

Penta adheres to the soil particles and is biodegradable at low environmental concentrations. In soil and surface water, it breaks down when exposed to sunlight and bacteria, leaving only a small fraction that has the potential for human exposure. Penta molecules also degrade quickly in the air. The trace quantities that may migrate from the base of a pole remain close to the pole and do not migrate to groundwater. As a result, emissions of trace amounts of penta into the environment do not equate to high levels of exposure.

The vertical movement of penta treating solution down the pole due to gravity serves a useful purpose by providing additional preservative at ground level where it is most needed to control fungal attack. To ensure that these minute environmental emissions of penta do not present a health or environmental risk, penta manufacturers have spent millions of dollars to evaluate the safety of the chemical.

Penta is the Low-Emission Choice

Penta has a number of important characteristics that actually help reduce emissions and discharges to the environment:

As an organic, oil-borne preservative, penta effectively penetrates wood, ultimately reducing the risk of leaching and emissions.

Penta's low water solubility decreases the potential for preservative leaching.

Penta does not contain metals that may leach into and remain in the soil.

Penta's low vapor pressure results in very low air emissions from treated wood.



Penta is not a Persistent Organic Pollutant (POP)

Penta is not a persistent organic pollutant (POP) as defined by the EPA and the United Nations. Penta's persistence and bioaccumulation potential are far below levels that are used to define POPs under the Stockholm Convention on Persistent Organic Pollutants.



Environmental Emissions of Penta



According to the results of these extensive scientific studies, many of which were recently updated as part of penta's re-registration process, environmental releases of penta were well below levels of concern, as illustrated by the following examples:

Soil testing from sites throughout the United States indicates that, on average, less than one-third of a teaspoon, only 1.6 grams, of penta is present in the soil around a typical penta utility pole. In addition, studies conducted by the Electric Power Research Institute (EPRI) show that penta concentration in soil decreases very rapidly with distance from the pole.

Risk assessments using highly conservative assumptions show that penta does not reach groundwater, and therefore, is not expected to adversely affect water quality.

Groundwater risk assessments show that any dioxins in the penta are even less mobile than the penta itself, staying within the top inch or so of the soil and not migrating beyond approximately eight inches of the pole.

Levels of penta predicted to leach from treated wood upon landfill disposal are far below the levels that should be of environmental concern.

Dioxin Emissions Are Insignificant

In-service penta poles are not a significant source of dioxin emissions to the environment. Manufacturers have sought to improve on this record by reducing the dioxin TEQ levels in penta by 65 percent over the past 15 years. Studies show that the trace amounts of dioxins that may be emitted to the air during a pole's lifetime are insignificant compared to other sources of dioxin emissions. In addition, while small amounts of penta leach into the soil surrounding the poles, research conducted by Environment Canada and The Weinberg Group suggests that any dioxins in the penta:

- stay within approximately eight inches of the pole
- decrease exponentially with distance
- are not absorbed by the surrounding vegetation
- will not exceed applicable groundwater standards.

What's That Smell?

On occasion, utility companies receive calls from concerned consumers asking about the odors emanating from a penta pole, particularly after a pole is newly installed or on a hot day. The odor is most likely due to the P9 oil, which is used to dissolve the penta applied to the pole during the treating process. P9 oil is similar to heating oils or diesel fuels.



The Facts

Penta manufacturers are committed to the purity of their product. As a result of manufacturing process improvements, **today's penta poles have 65 percent less dioxin on a TEQ basis** than poles produced in the mid-1980s. ("TEQ" denotes "toxic equivalent," an internationally recognized description of the relative toxicity of dioxins.)

What are Dioxins?

The term "dioxins" refers to a family of chemicals comprising 75 different types of dioxin compounds and 135 related compounds called furans. These chemicals form as unwanted by-products in various industrial, as well as natural processes, when certain organic compounds and chlorine are heated to high temperatures. The dioxins vary widely in toxicity. The dioxin universally considered the most toxic – 2,3,7,8-TCDD – is not found in penta at the detection limit of 1 ppb.

Why are There Dioxins in Penta?

Penta contains traces of various dioxins, furans, and other microcontaminants that are created as unintentional by-products of the manufacturing process. As a condition of registration, EPA requires these contaminants to meet very strict limits. The producers of penta are currently funding research at the University of Michigan directed at reducing microcontaminant concentrations further than is currently feasible.

Permissible levels of dioxins in penta are tightly controlled by federal regulation. The U.S. Environmental Protection Agency (EPA) requires that registered penta contain no 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) at a 1.0 part-per-billion (ppb) detection limit, and that hexachlorodibenzo-p-dioxin content not exceed two parts per million on average.

To assure the purity of their product and comply with federal standards, penta manufacturers test every batch and submit monthly reports to the EPA that detail the dioxin content in the penta they produce. These data show that today's penta is well within federal limits.

In addition, in-service penta poles are not a significant source of dioxin emissions to the environment, according to the EPA. Studies show that the amounts of dioxins that may be emitted to the air during a pole's lifetime are minute (between 5 and 13 nanograms TEQ). In fact, no more than 0.04 percent of the overall airborne dioxin emissions in the U.S. are estimated to come from in-service penta poles. While small amounts of penta leach into the soil surrounding the poles, research shows that any dioxins in the penta stay within eight inches of the pole, decrease exponentially with distance and are not taken up by the surrounding vegetation.

Penta manufacturers continuously seek new ways to improve the purity of their product. To explore ways to reduce dioxin levels even further, penta manufacturers are working with the University of Michigan's Department of Engineering on a two-year project to find practical ways for producing penta with even less dioxins.



Do Penta Poles Produce Dioxins When They Burn?

The burning of penta-treated wood, and most other materials, under poor combustion conditions will form some dioxins. That is one reason why EPA recommends against burning treated wood in fireplaces, wood stoves or open pits. The incineration of penta-treated poles and the combustion of penta in properly permitted industrial boilers is a different matter. Studies show that carefully controlled and properly operated combustion devices destroy more than 99.99% of dioxins in penta-treated wood.



Penta-Treated Wood & Health



Wood preserved using penta does not pose adverse health effects. Although penta must be toxic to do its job of protecting wood from insects and fungi, its toxicity is not unusual when compared to other wood preservatives or other commonly used chemicals. With proper application, handling and use, exposures to penta among wood treaters, linemen and others who work with penta are low – typically far below levels at which test animals have shown any toxic effects – and well within safety margins. Using highly conservative assumptions, the latest scientific data show that penta poles do not pose significant risks to people, wildlife, aquatic life, or the environment. Environmental exposures from treated wood are also insignificant from the standpoint of public health.

Occupational and Environmental Exposures

Wood treaters. An eight-year review of the use of penta as a wood preservative completed in 1986 found no increase in significant adverse health effects among workers in the formulation or treating process. Workers in these job functions were considered to have the highest potential risk of exposure to penta.

Linemen. Linemen also do not have a significant increased risk of cancer or other serious health effects from climbing penta poles. An assessment of linemen's potential risks in 1999 by Risksciences.com found that the potential likelihood of developing serious health problems from working with penta poles was low .

Penta is Thoroughly Tested for EPA Registration

To safeguard workers and consumers, as well as provide ongoing product quality assurance, penta and other major wood preservatives periodically must be re-registered by the EPA. Assessments conducted in conjunction with the re-registration process evaluate potential exposure scenarios, including exposures to workers who treat poles, to utility linemen who climb poles, and to children who play near poles. The current re-registration is expected to be completed by 2005.



Penta-Treated Wood & Health



Children. Children are not at risk from playing in areas where penta poles are present. This was the conclusion reached in a 1999 assessment conducted by CPF Associates that used EPA standard methods. According to the study, there are only 1.6 grams of penta in the soil around a typical utility pole, and these concentrations decrease very rapidly with distance from the pole. That said, utility poles are not toys, and parents should instruct children never to lick or climb a pole. Common sense is all that is required to eliminate potential risks to children from penta poles.

Taking Care

A number of safety precautions should be taken when handling, using or disposing of penta-treated wood to minimize potential health effects. These include:

Handling Precautions

- Wear gloves and clothing that prevent direct contact with the skin
- Avoid frequent or prolonged inhalation of sawdust
- Wash clothes stained with penta before reuse
- Wash work clothes separately from other household clothing
- Wash all exposed areas of the skin after handling wood, and before eating or smoking

For additional safety and handling guidance, please refer to the Consumer Information Sheet — Pentachlorophenol Pressure-Treated Wood and Manufacturer's Safety Data Sheets (MSDSs) for Penta and Penta-Treated Wood.

Usage Precautions

- Do not burn in open fires or stoves, fireplaces, or residential boilers
- Do not use in residential, industrial or commercial interiors except for laminated beams or for building components having two coats of recommended sealant
- Do not use on furniture or other items where there will be frequent or prolonged contact with skin or clothes
- Do not use where there are opportunities for domestic animals or livestock to lick, bite or rub against treated wood
- Do not use on items that will be for food storage, preparation or consumption by humans or animals

Commonly Asked Questions About Penta

Q: Why do linemen prefer penta poles?

A: Linemen prefer penta-treated poles because they are easy to install, easy to maintain, and are safe to work with in a range of weather conditions.

Most maintenance is simple and can be performed by linemen on the spot. If linemen need to climb a penta pole, they can quickly attach gaffs and climb without delay – working on more poles, more quickly.

The flexibility of penta-treated poles makes them less susceptible to ice and windstorm breakage. Their moisture resistance prevents checking and twisting. And penta poles pose significantly less risk of electrocution because they are not as conductive as non-wood poles.

Penta's "linemen friendly" characteristics are well established throughout the industry. That's why penta poles are chosen for pole events at the annual International Lineman's Rodeo.

Q: How do penta poles' costs compare to other utility poles?

A: Competitively priced, penta poles' true value is in the cost savings they produce throughout their lifespan.

Penta's preservative characteristics ensure that poles typically last 40 years or longer. In fact, penta poles' replacement rate averages less than four percent per decade with periodic maintenance, according to in-service records from several utility companies.

Penta poles save time and costs associated with storage and installation because they do not require special equipment. Labor costs are reduced because penta poles are flexible, thereby minimizing breakage and, if they do require repair, are easier to climb by linemen than other poles.

Even after they are removed from service, penta poles still provide a long-term cost benefit because they can be re-used, recycled or safely disposed of in landfills.

Q: What is the availability of penta treated poles?

A: Time and again, penta pole production has met emergency demand caused by natural disasters, such as hurricanes, ice storms and tornados. Of the preservatives available for treating wood, only penta is created from two basic and widely available chemicals: phenol and chlorine. This makes penta a commodity product, with stable pricing, reliable supplies and a track record of use for more than 60 years.

Penta manufacturers are firmly committed to producing ample supplies for the market, and they continue to work with the EPA to ensure penta re-registration.

Commonly Asked Questions About Penta

Q:

What disposal options are available after poles are taken out of service?

A:

Because they are not considered to be a hazardous waste, penta poles can be reused and recycled in a number of ways, such as fence posts and farm lighting. In fact, industry data indicate that nearly 70 percent of out-of-service poles are re-used.

Penta poles can be burned for energy recovery in combustion units and industrial boilers that are allowed to burn penta-treated wood because penta does not contain any toxic metals, unlike some other wood preservatives. This results in almost complete destruction of the penta, with dioxin/furan emissions comparable to that from ordinary particleboard.

If re-use or energy recovery options are not available, penta poles can be safely disposed of in landfills.

Q:

Are children who play near penta poles at risk?

A:

Studies show that children are not at risk from playing in areas where penta poles are present. This was the conclusion reached in a 1999 assessment conducted by CPF Associates that used EPA standard risk assessment methods. According to the study, there are only 1.6 grams of penta in the soil around a typical utility pole, and these concentrations decrease very rapidly with distance from the pole.

That said, utility poles are not toys, and parents should instruct children never to lick or climb a pole. Common sense is all that is required to eliminate potential risks to children from penta poles.

Q:

Are people who work with penta poles at risk?

A:

Numerous scientific studies and a 60-year history of effective use demonstrate that penta does not cause adverse health effects when properly used. With proper application, handling and use, exposures to penta among wood treaters, linemen and others who work with penta are low – typically far below levels at which test animals have shown any toxic effects – and well within safety margins.

Penta has not been shown to cause cancer in humans. Concerns about penta's potential health effects are based on the results of tests performed on laboratory animals. As a result of these tests, penta has been shown to be a weak carcinogen that is classified as "possibly carcinogenic to humans".



Commonly Asked Questions About Penta

Q: What are penta's effects on the environment?

A: Penta has a 60-plus year track record of environmental safety and proven performance. As a pesticide, the Environmental Protection Agency requires penta to undergo regular in-depth testing and analysis. To develop the state-of-the-art data required for the EPA's most recent re-registration process, penta manufacturers spent millions of dollars developing numerous toxicological studies and risk assessments by leading experts in the fields of toxicology, environmental fate and occupational exposure. In every case, using highly conservative assumptions, the latest scientific data show that penta poles do not pose significant risks to people, wildlife, aquatic life, or the environment.

Q: What precautions can be taken to minimize exposure to penta?

A: A number of safety precautions should be taken when handling, using or disposing of penta-treated wood to minimize potential health effects. These include wearing protective gloves and clothing, washing clothes and exposed skin, and adhering to common sense precautions, such as not burning penta poles or using penta-treated wood in places where there will be frequent or prolonged contact with humans and animals.

The Consumer Information Sheet—Pentachlorophenol Pressure-Treated Wood that was jointly developed by the American Wood Preservers Institute and the EPA provides useful safety and handling guidance.

Q: What safety and health regulations address the use of penta-treated utility poles?

A: Recommended use and appropriate handling precautions for penta are based on two major federal laws: the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Occupational Safety and Health Act (OSHA).

FIFRA contains the provisions authorizing the re-registration of penta and other major wood preservatives. Tests conducted in conjunction with the re-registration process evaluate penta's use under nearly every conceivable exposure scenario, including exposures to workers who treat poles, to utility linemen who climb poles, and to children who play near poles. The current re-registration process is expected to be completed by 2005.

Regulations associated with the Occupational Safety and Health Act (OSHA) require that Material Safety Data Sheets (MSDS) for penta-treated wood are distributed by all manufacturers of penta-treated wood products. The MSDS outlines recommended use and appropriate handling precautions for penta-treated wood.

Q: Does penta contain dioxins?

A: Penta poles do contain trace amounts of dioxins, however, in-service penta poles are not a significant source of dioxin emissions to the environment, according to the EPA. In fact, no more than 0.04 percent of the overall airborne dioxin emissions in the U.S. are estimated to come from in-service penta poles.

It is important to note that the dioxin considered to be the most hazardous, 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD), is not found in the penta used in North America down to detection limits of 1 part per billion.