It produces a super-deep, rich blackness and corrosion resistance in high volume for parts with no unusual难readable problem areas. It is designed for use where ordinary blackening processes fail.

In most applications, InstaBlak® 333 will produce a smooth, uniform black finish in a single bath. Advantageously, InstaBlak 333 is also a semi-automated blackening process. Obviously, with other room-temperature blackening processes they may use a series of problems, which always includes an activation step and another rinse prior to blackening. The whole system is an activation step required with InstaBlak 333.

Wider window of operation. InstaBlak 333 produces the same degree of blackness with a ten-minute or a four-hour immersion time. whereas other processes with short 90-second immersion times will require timing almost to the second to develop the optimum black oxide finish. Since the formation of the blackening reaction is essentially a self-limiting reaction that can be controlled, the immersion time is not critical with the InstaBlak process.

Also, InstaBlak® produces the same results at 10%, 15% or 25% concentrations. The wider window of operation means that the quality of the black finish can be maintained with different operators and concentrations, and makes it practical to install InstaBlak® in automated finishing machines.

InstaBlak® 333 offers superior corrosion resistance with resistance to over 150 hours salt spray when sealed with E-Tec S12.

Blackening Solutions Used In The Process
InstaBlak® 333 is a single-component, liquid concentrate which is used at 10% by volume in water to blacken carbon steel, alloy steels, tool steels as well as cast iron and forged steels. It is not blackening cast iron. InstaBlak® 333M—333E is a two-component system which contains the metal blackening chemical components and is used at 10% by volume in water. The 333M enhancer component controls the reaction which governs the speed of the blackening reaction and depth of blackness.

Cleaning Compounds Used In The Process
E-Kleen® 40E is an alkaline liquid concentrate used at 10% in water at 120 to 140°F.

E-Kleen® 101 is a powdered alkaline formulation used at 50 to 100 parts per gallon of water at 75 to 90°F for the heavy-duty cleaning of heavily soiled parts.

Activators Used In The Process
E-Tec 300 is a general-purpose surface conditioner/activator used on difficult-to-blacken stainless steel surfaces. It eliminates irrelevant blue finishes. InstaBlak 333M—333E is more effective with E-Tec 300. InstaBlak, E-Tec 250 is used as a combination brightener and activator to eliminate the alkaline cleaner for steel surfaces which have been sand or glass-bead blasted or preconditioned in a vibratory unit. Liquid concentrates used at 10% by volume in water at 75 to 105°F.

Sealants Used In The Process
E-Tec 501 is formulated to give a very rapid water displacement and to leave a thin, transparent, corrosion-resistant film. It will not gum up under high humidity and high temperatures conditions. It leaves a clear, glassy finish.

E-Tec 503—same as E-Tec 501 but leaves a very tight oily film.

E-Tec 504—same as 503 but leaves a dry-to-the-touch film.

E-Tec 505—similar to 504 but leaves an ultra-thin, soft oily, not tacky finish.

E-Tec 506—same as 505 but leave a much thicker oily, soft finish with maximum corrosion resistance. All of the above solvent-based E-Tec water displacing formulations are available as E-Tec NVOC formulas which eliminate the release of VOC’s to the atmosphere.

E-Tec 512—an emulsifiable (water-soluble oil) formulation for dry-to-the-touch film.

E-Tec 520—a glass clear acrylic water-based formulation.

E-Tec 521—a glass clear water-based sealer.

E-Tec 521-B—a black gloss, water-based wax.

E-Tec 523—a satin clear, water-based wax.
Corrosion Protection—Adds users of service life to parts and extends the shelf life of stored parts.

Durable—The black chemical conversion finish does not chip, craze or peel.

Anti-Galling—When it is necessary to break-in moving parts, the anti-galling surface sacrifices the lubricating layer of black during initial contact and abrasion while a work-hardened surface is formed.

Lubricity—InstaBlak provides for smoother running of mating parts.

Durable—The black chemical conversion finish does not chip, craze or peel.

High Productivity—Parts can be blackened in ten minutes at 10 to 30 minutes for hot oxide. Normally twice the amount of parts can be blackened in the same amount of time as with hot oxide. Reduce two shifts to one. Easily automated.

Controllable—Long bath life, blackening solution may be replenished indefinitely with periodic additions of fresh concentrate.

Lubricity—InstaBlak is as easy to install and use that you can now economically apply a blackening decorative, sale-appealing black coating to iron and steel parts.

Versatility—InstaBlak can be used for oil, water, and steam dead-ended high and medium pressure, non-critical applications.

Productivity and Economy—A much quicker, easier, and cheaper job that can be done in house.

Convenient—Easy to do in house. No waiting for heatup of blackening solution. No waiting for the unpredictable return of parts from an outside vendor. Eliminates high outside vendor costs. Peen control of production and equalization from batch to batch is simplified. InstaBlak especially well for blackening large volume of small parts in a rotating barrel.

Higher Productivity—Parts can be blackened in ten minutes at 10 to 30 minutes for hot oxide. Normally twice the amount of parts can be blackened in the same amount of time as with hot oxide. Reduce two shifts to one. Easily automated.

Economic Appeal—InstaBlak is an aqueous, Alkaline, water-displacing solution. It is a mild chemical solution used at room temperature to blacken all types of iron and steel surfaces and powdered metals by immersing the parts in the InstaBlak® solution for two minutes.

Energy Cost Saving—InstaBlak is done at room temperature vs hot oxide blackening done at 260˚F.

Safety—Blackening solution uses odorless, non-inflammable, water-displaceable chemicals that require no venting in hot oxide. No hazardous, aqueous, heat-creating chemicals with fumes that present health hazards and no spattering of hot, skin-burning chemicals when making additions to the solution.

Energy Cost Saving—InstaBlak is done at room temperature vs hot oxide blackening done at 260˚F.

Low Capital Outlay—Expensive equipment not required. Simple five or seven tank system vs more expensive tanks, pumps, controls and hoods for hot oxide. Normally twice the amount of parts can be blackened in the same amount of time as with hot oxide. Reduce two shifts to one. Easily automated.

Low Maintenance—Long bath life, blackening solution may be replenished indefinitely with periodic additions of fresh concentrate.

Low Capital Outlay—Expensive equipment not required. Simple five or seven tank system vs more expensive tanks, pumps, controls and hoods for hot oxide.

Easy to do in house. No waiting for heatup of blackening solution. No waiting for the unpredictable return of parts from an outside vendor. Eliminates high outside vendor costs. Peen control of production and equalization from batch to batch is simplified. InstaBlak especially well for blackening large volume of small parts in a rotating barrel.

The Modern Low Cost Successor To Hot Black Oxidizing

It is a mild chemical solution used at room temperature to blacken all types of iron and steel surfaces and powdered metals by immersing the parts in the InstaBlak® solution for two minutes.

Why Blacken?

Why InstaBlak®?

The Blackening Process

Convenient—Easy to do in house. No waiting for heatup of blackening solution. No waiting for the unpredictable return of parts from an outside vendor. Eliminates high outside vendor costs. Peen control of production and equalization from batch to batch is simplified. InstaBlak especially well for blackening large volume of small parts in a rotating barrel.

The most commonly used process in commer- cial blackening inclusive seven steps.

Clean—Soaks such as cold-water rinse, alkaline cleaners, surfactants and rust inhibitors must be removed. Soaks can inhibit or prevent subsequent operations. They can negatively affect coating adhesion and appearance.

The Modern Low Cost Successor To Hot Black Oxidizing

5 Seal—The finish by immersing the parts for one minute in a compatible E-Tec water-displacing solution. The E-Tec corrosion inhibitors are formulated to readily displace the residual acidic solutions from the blackened surfaces. The E-Tec solution provides a protective film on the parts making the process a seven-step process.

Clean—Soaks such as cold-water rinse, alkaline cleaners, surfactants and rust inhibitors must be removed. Soaks can inhibit or prevent subsequent operations. They can negatively affect coating adhesion and appearance.

The Modern Low Cost Successor To Hot Black Oxidizing

2 Rinse—Cold, overflowing tap water is necessary to remove residual cleaning solution. Parts carry over an unvented cleaning film of alkaline cleaning solution would quickly contaminate a subsequent step of activation or blackening, resulting in a spotty or non-adherent black coating. Immerses for 30 to 60 seconds.

The Blackening Process

Clean—Soaks such as cold-water rinse, alkaline cleaners, surfactants and rust inhibitors must be removed. Soaks can inhibit or prevent subsequent operations. They can negatively affect coating adhesion and appearance.

3 Blacken—Immersion for two to four minutes at room temperature in a 10 to 15% by volume solution of InstaBlak 333. InstaBlak 333 is an aqueous, Alkaline, water-displaceable solution. It is a mild chemical solution used at room temperature to blacken all types of iron and steel surfaces and powdered metals by immersing the parts in the InstaBlak® solution for two minutes.

The Modern Low Cost Successor To Hot Black Oxidizing

Convenient—Easy to do in house. No waiting for heatup of blackening solution. No waiting for the unpredictable return of parts from an outside vendor. Eliminates high outside vendor costs. Peen control of production and equalization from batch to batch is simplified. InstaBlak especially well for blackening large volume of small parts in a rotating barrel.

Contact and abrasion while a work-hardened surface is formed.

Protective change with only 5 to 10 minutes of storage parts.

EPI engineer homework equipment designed to your specific requirements.

Low Maintenance—Long bath life, blackening solution may be replenished indefinitely with periodic additions of fresh concentrate.

InstaBlak is as easy to install and use that you can now economically apply a blackening decorative, sale-appealing black coating to iron and steel parts.

1 Cleaning—Soaks such as cutting oils, greases, solvents and rust inhibitors must be removed. Soaks can inhibit or prevent subsequent operations. They can negatively affect coating adhesion and appearance.

4 Rinse—In cold, overflowing tap water for 30 to 60 seconds to remove residual blackening solution.

The Modern Low Cost Successor To Hot Black Oxidizing

Convenient—Easy to do in house. No waiting for heatup of blackening solution. No waiting for the unpredictable return of parts from an outside vendor. Eliminates high outside vendor costs. Peen control of production and equalization from batch to batch is simplified. InstaBlak especially well for blackening large volume of small parts in a rotating barrel.

Higher Productivity—Parts can be blackened in a rotating barrel at 10 to 30 minutes for hot oxide. Normally twice the amount of parts can be blackened in the same amount of time as with hot oxide. Reduce two shifts to one. Easily automated.

Controllable—Long bath life, blackening solution may be replenished indefinitely with periodic additions of fresh concentrate.
Why InstaBlak?

Convenient – Easy to do in house. No waiting for the blackening solution to work. No handling of dangerous chemicals, only colorless, odorless and non-toxic InstaBlak solution.

Energy Cost Saving – Blackening is done at room temperature vs hot oxide blackening done at 262F.


Reduced Waste – For those that fat fog rinse, a fat fog rinse is not necessary. Blackening is done at room temperature, eliminates the need for hot rinse water, thus lowering water usage.

Productivity and Economy – A multi-stage process which necessitates the use of several processing steps makes blackening processes time consuming and inefficient.

InstaBlak is as easy to install and use that one can economically apply to large areas.

Versatility – Blackens cast iron, forged steel, cold-rolled, hardened tool steels and powdered metal parts. No white rust breakdown occurs with InstaBlak.

Dimensional Control – No heat distortion or warping of parts, no thermal distortion in large and small parts.

Environmentally Friendly – Disposal of solution is easy and clean.

Why InstaBlak?

The Modern Low Cost To Hot Black Oxidizing

It is a mild chemical solution used at room temperature to blacken all types of iron and steel surfaces and powdered metals by immersing the parts in the InstaBlak solution for two minutes.

Why Blacken?

Corrosion Protection – Adds years of service life to steel and extends the shelf life of stainless part.

Durability – The black chemical conversion finish does not chip, crack or peel.

Anti-Galling – When it is necessary to break-in mating parts, the anti-galling surfacescratch-foreseparatesurfaceblacksurfaceformingastrong,bondadsorbsdirt,makesurfaceharder.Tightfitissimplyassembledcriticallysizedpartsarecanbeassembled.

Elastic Appeal – Produces a pleasing, less-metalllic look which enhances the surface appearance of steel, which improves the suitability of the part.

It is a non-oxidizing, non-fuming, non-corrosive and non-irritating solution.

The Blackening process

1. Cleaning – Soaks such as cold, water rinses or solvents must be finished. Soak stip end, or powder metallurgy parts to remove all grease, oil or dust from the surface.

2. Rinse – To Cold Clean All Parts

3. Blacken – Immerses for two to four minutes at room temperature (a 2% to 10% by volume solution of InstaBlak 523).

4. Rinse – To cold, over blacking to water for 30 to 60 seconds to remove residual blackening solution.

The most commonly used processes in commercial blackening include seven steps: however, the InstaBlak process in most applications can be done in 15 minutes or less.

EPI can customize processes for your particular application, end use and design to meet your specific needs.

1. Cleaning – Soaks such as cold, water rinses or solvents must be finished. Soak stip end, or powder metallurgy parts to remove all grease, oil or dust from the surface.

2. Rinse – To Cold Clean All Parts

3. Blacken – Immerses for two to four minutes at room temperature (a 2% to 10% by volume solution of InstaBlak 523).

4. Rinse – To cold, over blacking to water for 30 to 60 seconds to remove residual blackening solution.

EPI can customize processes for your particular application, end use and design to meet your specific needs.

5. Seal – This finish by immersing the parts for one minute in a compatible EPI seal coating solution. The seal coating performs as a protective barrier to prevent corrosion and to impart a finish to the part. It can be applied directly to the parts without the need to pre-clean. EPI seal coating is non-flammable and will not crack or peel.
The Modern Low Cost Solution To Hot Black Oxidizing

It is a mild chemical solution used at room temperature to blacken all types of iron and steel surfaces and powdered metals by immersing the parts in the InstaBlak® solution for two minutes.

Why InstaBlak?

Convenient—Easy to do in house. No need for tanking or blackening solution. No waiting for the characteristic bloom of each treatment. No need to worry about oversoaking or undercooking.

Highly Productive—Parts can be blackened in seconds (1 to 30 minutes) and completely recoverable for reuse. Surface blackening is virtually the same amount of time for all scale sizes. Reduces shift times overall.

Energy Cost Saving—Blackening is done at room temperature vs hot oxide blackening done at 250°F.

Safety—Blackening solution uses non-toxic, water-soluble methods that require no special ventilation. No chemicals with fumes that present health hazards and no sparking of hot, skin-burning chemicals when making additions to the blackening solution.

Low Capital Outlay—Expensive equipment nor expensive overhead costs. Simple flow of seven tank systems. EPI will design a layout to fit your blackening needs and spaces for hot oxide and InstaBlak. (EPI will supply all equipment designed to your specifications).

Maximizes Intermediary Lines—Long equipment life. No expensive pollution control equipment. Only a simple exchange system is required to keep blackening solution fresh. InstaBlak® is a water washable solution.

Why Blacken?

Corrosion Protection—Add years of service life to your product or extend the shelf life of your parts...

Durability—The black chemical conversion film does not chip, flake or peel.

Anti-Galling—When it is necessary to break-in mating parts, the anti-galling surface resists the impressioning of galling during initial mating, and a more hardened surface is formed.

Lubricity—On-based post-treatment not only provide protection against corrosion, but also provide a smoother running of mating parts.

Dimensional Stability—Blackening process produces essentially no dimensional change with only 0.015 to 0.030 inches added to dimension. Blackening can also be used as a corrosion barrier to prevent reaction to their surface properties with polished surfaces retaining their glass and heat-treated parts, preventing paint or water hardness. Tool inserts are pre-hardened and can be re-ground.

Higher Productivity—parts can be blackened in minutes (1 to 30 minutes) for limited production runs. Surface blackening is virtually the same amount of time for all scale sizes. Reduces shift times overall.

Reduced Toxicity—For increased worker fatigue.

Productivity and Economy—A much faster process which results in shorter and/or reduced process time, cost-effective means of producing corrosion protection for iron and steel parts.

Energy Cost Saving—Blackening is done at room temperature vs hot oxide blackening done at 250°F.

Safety—Blackening solution uses non-toxic, water-soluble methods that require no special ventilation. No chemicals with fumes that present health hazards and no sparking of hot, skin-burning chemicals when making additions to the blackening solution.

Low Capital Outlay—Expensive equipment nor expensive overhead costs. Simple flow of seven tank systems. EPI will design a layout to fit your blackening needs and spaces for hot oxide and InstaBlak. (EPI will supply all equipment designed to your specifications).

Maximizes Intermediary Lines—Long equipment life. No expensive pollution control equipment. Only a simple exchange system is required to keep blackening solution fresh. InstaBlak® is a water washable solution.

The Blackening Process

1. Rinse—Rinse in Cold, Deionizing Tap Water—It is necessary to rinse the parts to remove residual cleaning solution. A minimum of two rinses will remove the blackening. A fixtures-blowing system or air knives in a spray booth or non-solvent/solvent finish, or water jet, air are all acceptable rinsing methods.

2. Blacken—Immerse for two to four minutes at room temperature or 120°F to 140°F by running solution in InstaBlak®

3. Rinse—In cold, deionizing tap water for 30 to 60 seconds to remove residual blackening solution.

4. Rinse—In cold, deionizing tap water for 30 to 60 seconds to remove residual blackening solution.

5. Seal—The finish by immersing the parts for one minute in a compatible EPI protective finish.
How Does InstaBlak 333 Compare With Other Room-Temperature Blackening Processes?

InstaBlak 333 is a single-component, liquid concentrate which is used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

InstaBlak 333M-333E is a two-component system which eliminates the need for acid etching. The first component is the make-up/maintenance solution used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

InstaBlak 333V is a one-step, liquid concentrate used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

Process Chemicals

Blacking Compounds Used In The Process
InstaBlak 333M is a single-component, liquid concentrate which is used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

InstaBlak 333M-333E is a two-component system which eliminates the need for acid etching. The first component is the make-up/maintenance liquid concentrate which contains the basic blackening chemical components and is used at 10% by volume in water. The 333M enhancer compound controls the reaction which governs the speed of the blackening reaction and depth of blackening.

Cleaning Compounds Used In The Process
E-Kleen 100 is an alkaline liquid concentrate used at 10% in water at 120 to 150°F.

Sealants Used In The Process
E-Tec 501 is formulated to give a very rapid water displacing film and to leave a thin, transparent corrosion-resistant film. It will not gum up under high humidity and high temperature conditions, it leaves a very light oily film.

E-Tec 500 is formulated to give a very rapid water displacing film and to leave a thin, transparent corrosion-resistant film. It will not gum up under high humidity and high temperature conditions, it leaves a very light oily film.

E-Tec 501 is a powdered alkaline formulation used in automated finishing machines.

E-Tec 501 is a powdered alkaline formulation used in automated finishing machines.

E-Tec 502 is a powdered alkaline formulation used in automated finishing machines.

E-Tec 503 is a powdered alkaline formulation used in automated finishing machines.

The_ENCODING_PRODUCT_NAME_ Product Line

InstaBlak 333 is a single component, liquid concentrate and is used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

Also developed the first successful single-additive brightener systems for copper, brass and nickel.

Also developed the first successful single-additive brightener systems for copper, brass and nickel.

Is a single component, liquid concentrate and is used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

Is a two-component system which eliminates the need for acid etching. The first component is the make-up/maintenance solution used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as stainless steel.

InstaBlak 333 produces the same results at a 10% or 5% concentration. The wide window of operation means that the quality of the black finish can be maintained with different operators and concentrations, and makes it practical to install InstaBlak 333 in automated finishing machines.

InstaBlak 333 offers superior corrosion resistance with resistance to over 150 hours salt spray when sealed with E-Tec 512.
It produces a super-deep, rich blackness and corrosion resistance equal to high-temperature blackening with no undesirable sub-surface oxidation. In addition, InstaBlak® can be used as an electrolytic blackening process. 

In most applications, InstaBlak® produces the same degree of blackness with a ten-minute or a four-minute immersion time, whereas other processes with short 30-second immersions require time almost to the second to develop the optimum black finish. InstaBlak® also eliminates undesirable stress relief, which means that the hardness of the black finish remains constant. Stress relief of ordinary black finishes makes the immersion time is not critical with the InstaBlak® process. Also, InstaBlak® produces the same results at a 10%, 15% or 25% concentration. The wider window of operation means that the quality of the black finish can be maintained with different operations and concentrations and makes it practical to install InstaBlak® in automated finishing machines.

InstaBlak® offers superior corrosion resistance with resistance to over 150 hours salt spray when sealed with E-Tec® 512.

Sealants Used In The Process

E-Tec® 501 is formulated to give a very rapid water displacing and to leave a thin, transparent corrosion-resistant film. It will not gum up under high humidity and high-temperature conditions. It leaves the surface clear for a perfect touch-up solution. It is recommended that the product be applied in a two-step process. Also, E-Tec® 501 has a slightly oily film with maximum corrosion protection.

All of the above solvent-based E-Tec® water displacing formulations are available as E-Tec®90C formulations which eliminate the release of VOCs to the atmosphere.

E-Tec® 512—an emulsifiable (water-soluble oil) formulation for dry-the-touch film.

E-Tec® 520—a gloss clear acrylic water-based formulation for dry-the-touch film.

E-Tec® 521—a gloss clear water-based sealant.

E-Tec® 521-B—a black gloss, water-based wax.

E-Tec® 521-C—a satin clear, water-based sealant.

Blackening Solutions Used In The Process InstaBlak® is a single-component, liquid concentrate which is used at 10% by volume in water to blacken carbon steels, alloy steels, tool steels as well as cast iron and forged steels. It will not blacken stainless steel, aluminum, brass, or copper alloys.

InstaBlak® 333M-333E is a two-component system which allows the metallic finisher to fine-tune (customize) the blackening process to full-sized parts. The 333M component is the make-up/activation liquid component which contains the basic blackening chemistry and is used at 10% by volume in water. The 333E enhancer component controls the reaction which governs the speed of the blackening reaction and depth of blackness.

Cleaning Compounds Used In The Process

E-Kleen® 404E—a solid, alkaline liquid concentrate used at 10% in water at 120°F to 150°F.

E-Kleen® 411 is a powdered alkaline formulation used at 50% to 75% of water at 70°F to 75°F for the heavy-duty cleaning of heavily gashed parts.

Activators Used In The Process

E-Prep 250 general purpose surface conditioner is used on difficult-to-blacken steel surfaces. It eliminates indelible blue finishes and provides a bright, black surface. E-Prep 250 is combined with InstaBlak® to prevent the formation of undesirable sub-surface oxidation. E-Prep 250 is used as a combination lightly alkaline cleaner and activator to eliminate the alkaline cleaner for steel surfaces which have been sand or glass-bead blasted or preoxidized in a vibratory unit. Liquid concentrates used at 10% by volume at 70°F to 90°F.

E-Prep 251—a slightly acidic cleaner and activator used on difficult-to-blacken steel surfaces. It eliminates indelible blue finishes and provides a bright, black surface.

E-Prep 252—a general purpose surface conditioner/activator used on difficult-to-blacken steel surfaces. It eliminates indelible blue finishes and provides a bright, black surface. E-Prep 252 is used in combination with InstaBlak® to prevent the formation of undesirable sub-surface oxidation. E-Prep 252 is used as a combination lightly alkaline cleaner and activator to eliminate the alkaline cleaner for steel surfaces which have been sand or glass-bead blasted or preoxidized in a vibratory unit. Liquid concentrates used at 10% by volume at 70°F to 90°F.

E-Prep 255—a general purpose surface conditioner/activator used on difficult-to-blacken steel surfaces. It eliminates indelible blue finishes and provides a bright, black surface. E-Prep 255 is used in combination with InstaBlak® to prevent the formation of undesirable sub-surface oxidation. E-Prep 255 is used as a combination lightly alkaline cleaner and activator to eliminate the alkaline cleaner for steel surfaces which have been sand or glass-bead blasted or preoxidized in a vibratory unit. Liquid concentrates used at 10% by volume at 70°F to 90°F.

E-Prep 258—a general purpose surface conditioner/activator used on difficult-to-blacken steel surfaces. It eliminates indelible blue finishes and provides a bright, black surface. E-Prep 258 is used in combination with InstaBlak® to prevent the formation of undesirable sub-surface oxidation. E-Prep 258 is used as a combination lightly alkaline cleaner and activator to eliminate the alkaline cleaner for steel surfaces which have been sand or glass-bead blasted or preoxidized in a vibratory unit. Liquid concentrates used at 10% by volume at 70°F to 90°F.

E-Prep 260 is a non-cyanide alkaline copper plating process.

E-Prep 261—a non-cyanide copper plating process.

E-Prep 262—a non-cyanide alkaline copper plating process.

E-Prep 263—a non-cyanide copper plating process.

E-Prep 264—a non-cyanide copper plating process.

E-Prep 265—a non-cyanide copper plating process.

E-Prep 501 is formulated to give a very rapid water displacing and to leave a thin, transparent corrosion-resistant film. It will not gum up under high humidity and high-temperature conditions. It leaves the surface clear for a perfect touch-up solution. It is recommended that the product be applied in a two-step process. Also, E-Tec® 501 has a slightly oily film with maximum corrosion protection.

Alkaline-based hot soak, spray and electrocleaners for all metals. Acid-based cleaners. Liquid and powdered formulations.

Acid salts, deoxidizers, desmutters, etchants and activators for metal surfaces.

Room-temperature antiquing/oxidizing process for copper, brass and bronze surfaces. Produces black to blackish-brown to pleasing brown tone.

Room-temperature antiquing/oxidizing process for copper, brass and bronze surfaces. Produces black to blackish-brown to pleasing brown tone.

InstaBlak® 2-206 immersion process for brass and zinc surfaces.

InstaBlak® 3-300 immersion process for aluminum.

InstaBlak® 3-304 seed-in for engraved aluminum.

E-Phos—Hot and manganesse phosphates including black zinc phosphates coatings.

B/0X Room-temperature antiquing/oxidizing process for copper, brass and bronze surfaces. Produces black to blackish-brown to pleasing brown tone.

Additives and brighteners for plating:

Copper — non-cyanide alkaline, acid and cyanide processes.

— non-cyanide acid.

— acid and alkaline.

— brass.

E-Pik—Room-temperature blackening for ferrous metals.

E-Prep—Water-based waxes for black, oily and dry-blackening of all metals.

UltraBlak® Conventional hot black oxide finishes for iron, steel, stainless steel, copper, brass, zinc and nickel surfaces.

E-Kleen® Metal Cleaning Products

Polishes, rust removers, desmutters, alcohols and activators for metal surfaces.

InstaBlak® Metal Cleaning Products

Polishes, rust removers, desmutters, alcohols and activators for metal surfaces.

Alkaline-based hot soak, spray and electrocleaners for all metals. Acid-based cleaners. Liquid and powdered formulations.

E-Tec® Fluid penetrants and corrosion inhibitors.

In addition to providing this wide range of top-quality products, all of which can be used in both rack and barrel operations, EPI offers you superb technical advice, outstanding laboratory service from knowledgeable, capable technicians utilizing up-to-the-minute lab facilities, and fast respond—all at competitive prices. Write, call, FAX or e-mail for descriptive literature. Your inquiry will receive prompt attention.