



# PRODUCT APPLICATION GUIDE

Your complete guide to the  Product Line.



This Product Application Guide is a convenient summary of the properties and applications of inhibitors. These products are compatible with a broad range of resin technologies, including solvent and water-borne, high performance and high solids systems. All HALOX® products are high speed dispersible. Excellent performance can be obtained from these products even at low loading levels.

Our Quality System is ISO 9001 Certified

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# Inorganic Corrosion Inhibitors

PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX® SZP-391</b>	Phosphosilicate Strontium Zinc Phosphosilicate <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> <li>No Hazardous Classification (no dead fish/dead tree)</li> </ul>	pH (10% solution by wt.) 7.2 Oil Absorption (lbs/100 lbs) 34.3 Density (g/ml) 3.3 Mean Particle Size (microns) 4.9 Hegman Grind 5.5 % Moisture 1.5 % L.O.I. (450° C) 5.5 % Solubility in water 0.02	<b>Most effective &amp; efficient corrosion inhibitor</b> <ul style="list-style-type: none"> <li>Solvent Borne Alkyds</li> <li>Water Reducible Epoxies</li> <li>Latex Emulsions</li> <li>High Solids Epoxies</li> <li>Acid Catalyzed Systems</li> <li>Polyesters</li> <li>Direct-to-Metal Finishes</li> <li>Vinylidene Chloride Systems</li> <li>High Solids Alkyds</li> <li>Water Reducible Alkyds</li> <li>Solvent 2K Epoxies</li> <li>Epoxy Esters</li> <li>Acrylic Lacquer Emulsions</li> <li>Thin Film Applications</li> <li>Gloss Systems</li> </ul>
<b>HALOX® SZP-391 JM</b>	Phosphosilicate Strontium Zinc Phosphosilicate <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (10% solution by wt.) 7.5 Oil Absorption (lbs/100 lbs) 34.0 Density (g/ml) 3.3 Mean Particle Size (microns) 2.0 Hegman Grind <8.0 % Moisture 1.5 % Solubility in water 0.02	<b>Micronized most effective &amp; efficient corrosion inhibitor</b> <ul style="list-style-type: none"> <li>Thin film coatings</li> <li>Wash (etch) primer</li> <li>SB Alkyds</li> <li>DTM Finishes</li> <li>SB Epoxy</li> <li>Aerospace, Auto Refinish</li> <li>WR Alkyds</li> <li>Clear coats</li> <li>Synergist for HALOX® 550</li> <li>High Solids Alkyd</li> <li>Gloss Coatings</li> <li>No EU hazardous label</li> <li>HDG, CRS and Galvalume™</li> <li>Effective at 50% normal dosage</li> </ul>



# Inorganic Corrosion Inhibitors

PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> Zinc Phosphate</b>	Phosphate Zinc Phosphate Pigment	<p>pH (10% solution by wt.) 8.2</p> <p>Oil Absorption (lbs/100 lbs) 42.0</p> <p>Density (g/ml) 3.2</p> <p>Mean Particle Size (microns) 5.0</p> <p>Hegman Grind 5.5</p> <p>% Moisture 2.2</p> <p>% L.O.I. (450° C) 10.0</p> <p>% Solubility in water 0.02</p>	<ul style="list-style-type: none"> <li>•Short Oil Alkyds</li> <li>•Medium Oil Alkyds</li> <li>•Long Oil Alkyds</li> <li>•Solvent 2K Epoxies</li> <li>•Epoxy Esters</li> <li>•Acid Catalyzed Systems</li> <li>•Polyesters</li> <li>•Vinylidene Chloride</li> <li>•Water Reducible Epoxies</li> <li>•Water Reducible Alkyds</li> <li>•Latex Emulsions</li> <li>•High Solids Epoxies</li> <li>•Water Based Epoxy Esters</li> <li>•Acrylic Lacquer Emulsions</li> <li>•Thin Film Applications</li> </ul>
<b>HALOX<sup>®</sup> Z-PLEX 250</b>	Phosphate Zinc Phosphate Pigment	<p>pH (10% solution by wt.) 7.5</p> <p>Oil Absorption (lbs/100 lbs) 25</p> <p>Density (g/ml) 3.3</p> <p>Mean Particle Size (microns) 5.0</p> <p>Hegman Grind 6.0A</p> <p>% L.O.I. (450° C) 9.0</p> <p>% Solubility in water 0.02</p>	<ul style="list-style-type: none"> <li>•Water-based coatings</li> <li>•Solvent-based coatings</li> <li>•Powder coatings</li> </ul>
<b>HALOX<sup>®</sup> Z-PLEX 111</b>	Phosphosilicate Zinc Phosphate Complex <ul style="list-style-type: none"> <li>▪ FDA Compliant</li> <li>▪ As defined by TSCA, this composite pigment is classified as a mixture</li> <li>▪ No Hazardous Classification (no dead fish/dead tree)</li> </ul>	<p>pH (10% solution by wt.) 8.1</p> <p>Oil Absorption (lbs/100 lbs) 36.3</p> <p>Density (g/ml) 3.0</p> <p>Mean Particle Size (microns) 5.9</p> <p>Hegman Grind 5.0</p> <p>% Moisture 0.6</p> <p>% L.O.I. (450° C) 4.2</p> <p>% Solubility in water 0.02</p>	<ul style="list-style-type: none"> <li>•Cost Effective Replacement for Zinc Phosphate Standard Commercial Grade</li> </ul>
<b>HALOX<sup>®</sup> CZ-170</b>	Phosphate Enhanced Zinc Ortho Phosphate Complex <ul style="list-style-type: none"> <li>▪ As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	<p>pH (10% solution by wt.) 8.1</p> <p>Oil Absorption (lbs/100 lbs) 43.5</p> <p>Density (g/ml) 3.6</p> <p>Mean Particle Size (microns) 4.3</p> <p>Hegman Grind 5.5</p> <p>% Moisture 1.5</p> <p>% L.O.I. (450° C) 7.4</p> <p>% Solubility in water 0.02</p>	<ul style="list-style-type: none"> <li>•Universal Tannin Stain and Corrosion Inhibitor</li> <li>•Multi-Substrate Water Base Systems</li> <li>•Direct-to-Metal Finishes</li> <li>•High Gloss Systems</li> <li>•Thin Film Applications</li> </ul>



# Inorganic Corrosion Inhibitors (Zinc-Free)

PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> 430</b> U.S. Patent No. 7,481,877	Calcium Phosphate Ion Scavenging <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (10% solution by wt.) 8.0 Oil Absorption (lbs/100 lbs) 45.0 Density (g/ml) 2.7 Mean Particle Size (microns) 4-6 Hegman Grind 4.0 % Moisture 0.5 % Solubility in water 0.02	<b>Zinc Free &amp; Heavy Metal Free Performance Synergistic &amp; Cost Effective Corrosion Inhibitor</b> <ul style="list-style-type: none"> <li>Waterborne 2K Epoxies</li> <li>Solvent borne 2K Epoxies</li> <li>Hybrids</li> <li>Water Reducible Alkyds</li> <li>Waterborne 2K Polyurethane</li> <li>Latex Emulsion</li> <li>Direct-to-Metal Finishes</li> <li>High Solids Epoxies</li> <li>Polyesters</li> </ul>
<b>HALOX<sup>®</sup> 430 JM</b> U.S. Patent No. 7,481,877	Calcium Phosphate Ion Scavenging <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (10% solution by wt.) 8.0 Oil Absorption (lbs/100 lbs) 50.0 Density (g/ml) 2.7 Mean Particle Size (microns) 2.0 Hegman Grind 6.0+ % Moisture 1.1 % Solubility in water 0.02	<b>Micronized Zinc Free, Heavy Metal Free Synergistic &amp; Cost Effective Corrosion Inhibitor</b> <ul style="list-style-type: none"> <li>Thin film coatings</li> <li>WB 2K Epoxies</li> <li>SB 2K Epoxies</li> <li>Hybrids</li> <li>High Solids Epoxies</li> <li>Aerospace, Auto Refinish</li> <li>Cathodic inhibitor</li> <li>Clear coats</li> <li>Latex Emulsions</li> <li>WB 2K Polyurethane</li> <li>Direct-to-Metal Finishes</li> <li>Polyesters</li> <li>HDG, CRS and Al protection</li> <li>Powder coatings</li> </ul>
<b>HALOX<sup>®</sup> CW-491</b>	Phosphosilicate Calcium Phosphosilicate <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture.</li> </ul>	pH (10% solution by wt.) 8.0 Oil Absorption (lbs/100 lbs) 45.9 Density (g/ml) 2.7 Mean Particle Size (microns) 4.3 Hegman Grind 5.0 % Moisture 1.4 % L.O.I. (450° C) 7.0 % Solubility in water 0.02	<b>Heavy Metal Free Performance</b> <ul style="list-style-type: none"> <li>Short Oil Alkyds</li> <li>Long Oil Alkyds</li> <li>Water Reducible Epoxies</li> <li>High Solids Epoxies</li> <li>Etch Primers</li> <li>Vinylidene Chloride</li> <li>Medium Oil Alkyds</li> <li>Water Reducible Alkyds</li> <li>Solvent 2K Epoxies</li> <li>Epox Esters</li> <li>Latex Emulsions</li> </ul>
<b>HALOX<sup>®</sup> SW-111</b>	Phosphosilicate Strontium Phosphosilicate <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (10% solution by wt.) 7.9 Oil Absorption (lbs/100 lbs) 45.1 Density (g/ml) 2.8 Mean Particle Size (microns) 5.9 Hegman Grind 5.0 % Moisture 0.8 % L.O.I. (450° C) 4.0 % Solubility in water 0.03	<ul style="list-style-type: none"> <li>Water Base Epoxies</li> <li>Latex Emulsions</li> <li>Caulks and Sealants</li> <li>Water Reducible Alkyds</li> <li>Solvent 2K Epoxies</li> </ul>

# Inorganic Corrosion Inhibitors (Zinc-Free, continued)



<b>HALOX<sup>®</sup> BW-191</b>	Phosphosilicate Barium Phosphosilicate <ul style="list-style-type: none"><li>FDA Compliant</li><li>As defined by TSCA, this composite pigment is classified as a mixture.</li></ul>	pH (10% solution by wt.) 8.2 Oil Absorption (lbs/100 lbs) 35.3 Density (g/ml) 3.0 Mean Particle Size (microns) 5.7 Hegman Grind 5.0 % Moisture 0.5 % L.O.I. (450° C) 3.0 % Solubility in water 0.02	●Waterborne Latexes ●High Solids Coatings	●Water Reducible Systems
<b>HALOX<sup>®</sup> CW-291</b>	Borosilicate Calcium Borosilicate <ul style="list-style-type: none"><li>FDA Compliant</li><li>As defined by TSCA, this composite pigment is classified as a mixture</li></ul>	pH (10% solution by wt.) 10.1 Oil Absorption (lbs/100 lbs) 28.4 Density (g/ml) 2.7 Mean Particle Size (microns) 5.7 Hegman Grind 5.0 % Moisture 0.3 % L.O.I. (450° C) 4.2 % Solubility in water 0.3	●Medium Oil Alkyds ●High Solids Alkyds ●Alkyd Gloss Topcoats	●Long Oil Alkyds ●Epoxy Esters ●Direct-to-Metal Finishes
<b>HALOX<sup>®</sup> CW-2230</b>	Borosilicate Calcium Borosilicate <ul style="list-style-type: none"><li>FDA Compliant</li><li>As defined by TSCA, this composite pigment is classified as a mixture</li></ul>	pH (10% solution by wt.) 10.1 Oil Absorption (lbs/100 lbs) 37.3 Density (g/ml) 2.6 Mean Particle Size (microns) 5.5 Hegman Grind 5.0 % Moisture 0.3 % L.O.I. (450° C) 6.0 % Solubility in water 0.4	●Medium Oil Alkyds ●Epoxy Esters ●Polyurethane	●Long Oil Alkyds ●Modified Alkyds
<b>HALOX<sup>®</sup> CW-22/221</b>	Borosilicate Calcium Borosilicate <ul style="list-style-type: none"><li>FDA Compliant</li><li>As defined by TSCA, this composite pigment is classified as a mixture</li></ul>	pH (10% solution by wt.) 10.1 Oil Absorption (lbs/100 lbs) 33.1 Density (g/ml) 2.7 Mean Particle Size (microns) 5.8 Hegman Grind 5.0 % Moisture 0.4 % L.O.I. (450° C) 4.2 % Solubility in water 0.3	●Medium Oil Alkyds	●Long Oil Alkyds



# Organic Corrosion Inhibitors (Water)

PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> 510</b> U.S. Patent No. 7,306,663	Liquid Organic Corrosion Inhibitor Amino Carboxylate Solution	pH (neat) 9.6 Specific Gravity @25°C 1.0 Density (lbs/gal) 8.7 Density (g/L) 1042 Appearance Clear to Slightly Turbid Color 1 % Solids 25.0 VOC (EPA Meth 24) 0.27 lbs/gal (32.4 g/L)	<ul style="list-style-type: none"> <li>• Long Term Corrosion Inhibitor</li> <li>• High gloss</li> <li>• Waterborne Acrylics</li> <li>• Direct to Metal primerless topcoats</li> <li>• Can eliminate flash rust inhibitor</li> <li>• Effective on weld seams</li> </ul>
<b>HALOX<sup>®</sup> 515</b> U.S. Patent No. 7,306,663	Liquid Organic Corrosion Inhibitor Amino Carboxylate Solution	pH (neat) 8.9 Specific Gravity @25°C 1.06 Density (lbs/gal) 8.8 Density (g/L) 1054 Appearance Clear to Slightly Amber Color 1 % Solids 20.5 VOC (EPA Meth 24) 0.66 lbs/gal (79.2g/L)	<ul style="list-style-type: none"> <li>• Long Term Corrosion Inhibitor</li> <li>• High gloss</li> <li>• Waterborne Acrylics</li> <li>• Direct to Metal</li> <li>• Primerless Topcoats</li> <li>• Can eliminate flash rust inhibitor</li> <li>• Effective on weld seams</li> </ul>
<b>HALOX<sup>®</sup> 515 LFG</b> U.S. Patent No. 7,306,663	Liquid Organic Corrosion Inhibitor Amino Carboxylate Solution (LOW-FREEZE GRADE)	pH (neat) 9.7 Specific Gravity @25°C 1.03 Density (lbs/gal) 8.8 Appearance Clear to Slightly Amber Color 1 VOC (EPA Meth 24) 1.88 lbs/gal (226 g/L)	<ul style="list-style-type: none"> <li>• Same as above</li> </ul>
<b>HALOX<sup>®</sup> 570</b>	Organic Corrosion Inhibitor Organic Acid Amine Complex	Appearance White to light beige crystalline powder Melting Range 67-73°C Specific Density @20° C 1.24 g/cm <sup>3</sup>  <u>Solubility (g/100g g solution @20°C)</u> Isopropanol ~30 n-Butanol ~20 Diethylene glycol monomethyl ether ~40 Methyl-isobutyl-ketone (MIBK) ~15 Xylene <1 Aliphatic Hydrocarbons (boiling range: 160-200°C) <1 Water (pH = 7) <0.25	<ul style="list-style-type: none"> <li>• Waterborne Acrylic Latexes</li> <li>• Co-polymers</li> <li>• Styrene/acrylic latexes</li> <li>• Acrylated epoxy esters</li> <li>• 2 Pack Epoxies</li> <li>• Alkyds</li> <li>• Alkyd/acrylic blends</li> <li>• 1-2 pack polyurethanes</li> <li>• Waterborne Systems</li> <li>• Direct to Metal primerless topcoats</li> <li>• Some solvent borne systems</li> <li>• Can eliminate flash rust inhibitor</li> <li>• Effective on weld seams</li> <li>• UV cured coatings</li> </ul>



# Organic Corrosion Inhibitors (Solvent)

PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> 630</b>	Liquid Organic Corrosion Inhibitor Alkylammonium Salt Solution	Appearance Slightly yellow solution Dynamic Viscosity @ 20° C 160mPa.s Specific Density @ 20° C 0.99g/cm <sup>3</sup>  <u>Solubility (g active substance/100g solution @ 20°C)</u> White Spirit >50 Isopropanol >50 n-Butanol >50 Butylacetate >50 Methyl-isobutyl-ketone (MIBK) >50 Propyleneglycol Monomethylether >50 Xylene >50 Water (pH = 7) <0.01	<ul style="list-style-type: none"><li>● 2 Pack Epoxies</li><li>● High solids epoxy esters and alkyds</li><li>● Acrylic Resins</li><li>● 2 Pack polyurethane primers</li><li>● Solvent borne systems</li></ul>
<b>HALOX<sup>®</sup> 650</b>	Organic Corrosion Inhibitor Organic Di-Acid	Appearance Slightly yellow granules Melting Point approx. 170°C (decomposition) Specific Density @ 20° C 1.52 g/cm <sup>3</sup>  <u>Solubility (g active substance/100g solution @ 20°C)</u> Diethyleneglycol Monobutylether 12 Dipropyleneglycol Monomethylether 26 Isopropanol 8 1-Methoxy Propylacetate-2 1 Methyl-isobutyl-ketone 2 Propyleneglycol Monomethylether 20 Xylene <0.01 Water (pH = 7) <0.01	<ul style="list-style-type: none"><li>● Coil coatings/thermoplastic acrylics or epoxies</li><li>● Powder coatings/polyester/TGIC</li><li>● Acid catalyzed thermosetting systems (melamine or urea formaldehyde)</li><li>● Wash (etch) primers</li><li>● Solvent borne systems</li></ul>



# Hybrid Corrosion Inhibitors (Liquids)

PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> 550</b>	Liquid Inorganic-Organic Hybrid Corrosion Inhibitor	pH (neat) 7.0 Specific Density (g/cc) 0.99 Appearance Clear colorless liquid % Solubility 100% Odor Nil VOC (EPA Meth 24) 3.71 lbs/gal (445 g/L)	<ul style="list-style-type: none"><li>• Waterborne coatings</li><li>• Solventborne coatings</li><li>• Coil coatings</li><li>• Conversion coatings</li><li>• Semi to High Gloss coatings</li><li>• Wash primers</li><li>• Thin films (&lt; 1.0 mil)</li><li>• Anti-fingerprint protection</li><li>• Reduces black rust on Galvalume<sup>®</sup> metal</li><li>• Strontium chromate and chromic acid replacement in clear coats</li></ul>
<b>HALOX<sup>®</sup> 550 WF</b>	Water-free Liquid Inorganic-Organic Hybrid Corrosion Inhibitor	pH (neat) 7.0 Specific Density (g/cc) 0.99 Appearance Clear colorless liquid % Solubility miscible Odor Nil VOC (EPA Meth 24) 8.17 lbs/gal (979 g/L)	<ul style="list-style-type: none"><li>• Waterborne coatings (e.g. water reducible alkyds)</li><li>• Solventborne coatings (e.g. polyurethanes)</li><li>• Gloss coatings</li><li>• Thin films (&lt; 1.0 mil)</li><li>• Clear coats</li><li>• Anti-fingerprint coatings</li><li>• Synergist to jet-milled products</li><li>• Strontium chromate and chromic acid replacement</li></ul>

# Hybrid Corrosion Inhibitors (Powders)



PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> 750</b>	Corrosion Inhibitor Mixture <ul style="list-style-type: none"> <li>FDA Compliant</li> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	<p>pH (10% solution by wt.) 7.2</p> <p>Oil Absorption (lbs/100 lbs) 27.0</p> <p>Density (g/ml) 3.0</p> <p>Mean Particle Size (microns) 5.0</p> <p>Hegman Grind 5.0</p> <p>% Moisture 0.8</p> <p>% Solubility in water 0.02</p>	<p><b>Low Zinc, Cost Effective Hybrid Corrosion Inhibitor</b></p> <ul style="list-style-type: none"> <li>Latex Emulsions</li> <li>Solvent-borne 2K Epoxies</li> <li>Hybrids</li> <li>Chromate-replacement</li> <li>High Solids Epoxies</li> <li>Solvent-borne Alkyds</li> <li>Water Reducible Alkyd (Air Dry)</li> </ul>

# FLASH-X<sup>®</sup> Flash-Rust Inhibitors



PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup></b> <b>FLASH-X<sup>®</sup> 150</b>	Liquid Flash Rust Inhibitor Liquid Additive <ul style="list-style-type: none"> <li>As defined by TSCA, this liquid additive is classified as a mixture.</li> </ul>	pH (neat) 9.6 Specific Gravity @ 25°C 1.14 Appearance Clear Liquid Color Light straw % Solids 24 VOC (EPA Meth 24) 0.85 lbs/gal (102 g/L)	<ul style="list-style-type: none"> <li>Water-base protective coatings</li> <li>In-can corrosion protection</li> </ul>
<b>HALOX<sup>®</sup></b> <b>FLASH-X<sup>®</sup> 330</b>	Nitrite Free Liquid Flash Rust Inhibitor Liquid Additive <ul style="list-style-type: none"> <li>As defined by TSCA, this liquid additive is classified as a mixture.</li> </ul>	pH (neat) 8.3 Specific Gravity @25°C 1.21 Appearance Clear Liquid Color Light straw % Solids 68 VOC (EPA Meth 24) 1.11 lbs/gal (133 g/L)	<ul style="list-style-type: none"> <li>Water-base protective coatings</li> <li>Water jet blasting and metal working applications</li> </ul>
<b>HALOX<sup>®</sup></b> <b>FLASH-X<sup>®</sup> 350D</b>	Organic Flash Rust Inhibitor Organic Di-Acid <u>Nitrite Free</u>	Appearance Slightly yellow filter cake Melting Point approx. 170°C (decomposition) Specific Gravity @20° C 1.57 Density 12.66 lbs/gal (1520 g/L) % Solids 97-100  <u>Solubility (g active substance/100g solution @20°C)</u> Diethyleneglycol Monobutylether 12 Dipropyleneglycol Monomethylether 26 Isopropanol 8 1-Methoxy Propylacetate-2 1 Methyl-isobutyl-ketone (MIBK) 2 Propyleneglycol Monomethylether 20 Xylene <0.01 Water (pH = 7) <0.01	<ul style="list-style-type: none"> <li>Flash rust inhibition</li> <li>In-can protection</li> <li>Temporary corrosion protection</li> <li>Fountain solutions, Inks</li> </ul>
<b>HALOX<sup>®</sup></b> <b>FLASH-X<sup>®</sup> 370</b>	<u>Nitrite Free</u> Liquid Flash Rust Inhibitor Liquid Additive <ul style="list-style-type: none"> <li>As defined by TSCA, this liquid additive is classified as a mixture.</li> </ul>	pH (neat) 7.0 Specific Gravity @25°C 1.07 Appearance Clear Liquid % Solids 36 VOC (EPA Meth 24) 0.6 lbs/gal (72 g/L)	<ul style="list-style-type: none"> <li>Flash rust inhibitor for paints (pH 4-6)</li> <li>Corrosion inhibitor</li> <li>Cationic acrylic, epoxy, PUD</li> </ul>

## XTAIN<sup>®</sup> Tannin Stain Inhibitors



PRODUCT	CLASSIFICATION/ CHEMICAL DESCRIPTION	PHYSICAL PROPERTIES (Typical)	SUGGESTED APPLICATIONS
<b>HALOX<sup>®</sup> BW-100</b>	Phosphosilicate Barium Phosphosilicate Pigment <ul style="list-style-type: none"> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (10% solution by wt.) 7.5 Oil Absorption (lbs/100 lbs) 37.1 Density (g/ml) 2.8 Mean Particle Size (microns) 5.1 Hegman Grind 5.0 % Moisture 2.0 % L.O.I. (450° C) 4.0 % Solubility in water 0.2	<ul style="list-style-type: none"> <li>●Acrylic Latexes</li> <li>●Vinyl Acrylic Latexes</li> <li>●Styrenated Acrylic Latexes</li> <li>●Solvent Based Alkyds</li> </ul>
<b>HALOX<sup>®</sup> XTAIN<sup>®</sup> A</b>	Phosphosilicate Aluminum Zirconium Phosphosilicate Pigment <ul style="list-style-type: none"> <li>As defined by TSCA, this composite pigment is classified as a mixture.</li> </ul>	pH (10% solution by wt.) 10.0 Oil Absorption (lbs/100 lbs) 33.1 Density (g/ml) 3.1 Mean Particle Size (microns) 5.8 Hegman Grind 5.0 % Moisture 0.5 % Solubility in water 0.1	<ul style="list-style-type: none"> <li>●Acrylic Latexes</li> <li>●Vinyl Acrylic Latexes</li> <li>●Styrenated Acrylic Latexes</li> <li>●Solvent Based Alkyds</li> </ul>
<b>HALOX<sup>®</sup> XTAIN<sup>®</sup> L-44</b>	Liquid Additive <ul style="list-style-type: none"> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (neat) 9.0 Specific Gravity @25° C 1.3 Appearance Clear Liquid % Solids 30 VOC (EPA Meth 24) 1.26 lbs/gal (151g/L)	<ul style="list-style-type: none"> <li>●Eliminates need for zinc oxide</li> <li>●Versatile</li> <li>●Can post add to finished products under good agitation</li> <li>●Acrylic Latexes</li> <li>●Vinyl Acrylic Latexes</li> <li>●Styrenated Acrylic Latexes</li> <li>●Solvent Based Alkyds</li> </ul>
<b>HALOX<sup>®</sup> XTAIN<sup>®</sup> L-66</b> U.S. Patent No. 6,533,856	Liquid Additive <ul style="list-style-type: none"> <li>As defined by TSCA, this composite pigment is classified as a mixture</li> </ul>	pH (10% solution by wt.) 12.7 Specific Gravity @ 25° C 1.2 Appearance Clear Liquid Density 10.2 lbs/gal % Solids 44.5 VOC (EPA Meth 24) 0.00 lbs/gal (0 g/L)	<ul style="list-style-type: none"> <li>●Low odor inhibitor</li> <li>●Versatile</li> <li>●Can post add to finished products under good agitation</li> <li>●May reduce the zinc oxide demand in polymers dependant on zinc oxide for stain blocking</li> <li>●Can contribute to the rheology of the coatings system</li> </ul>