

## PYROPHORIC SCALE REMOVAL

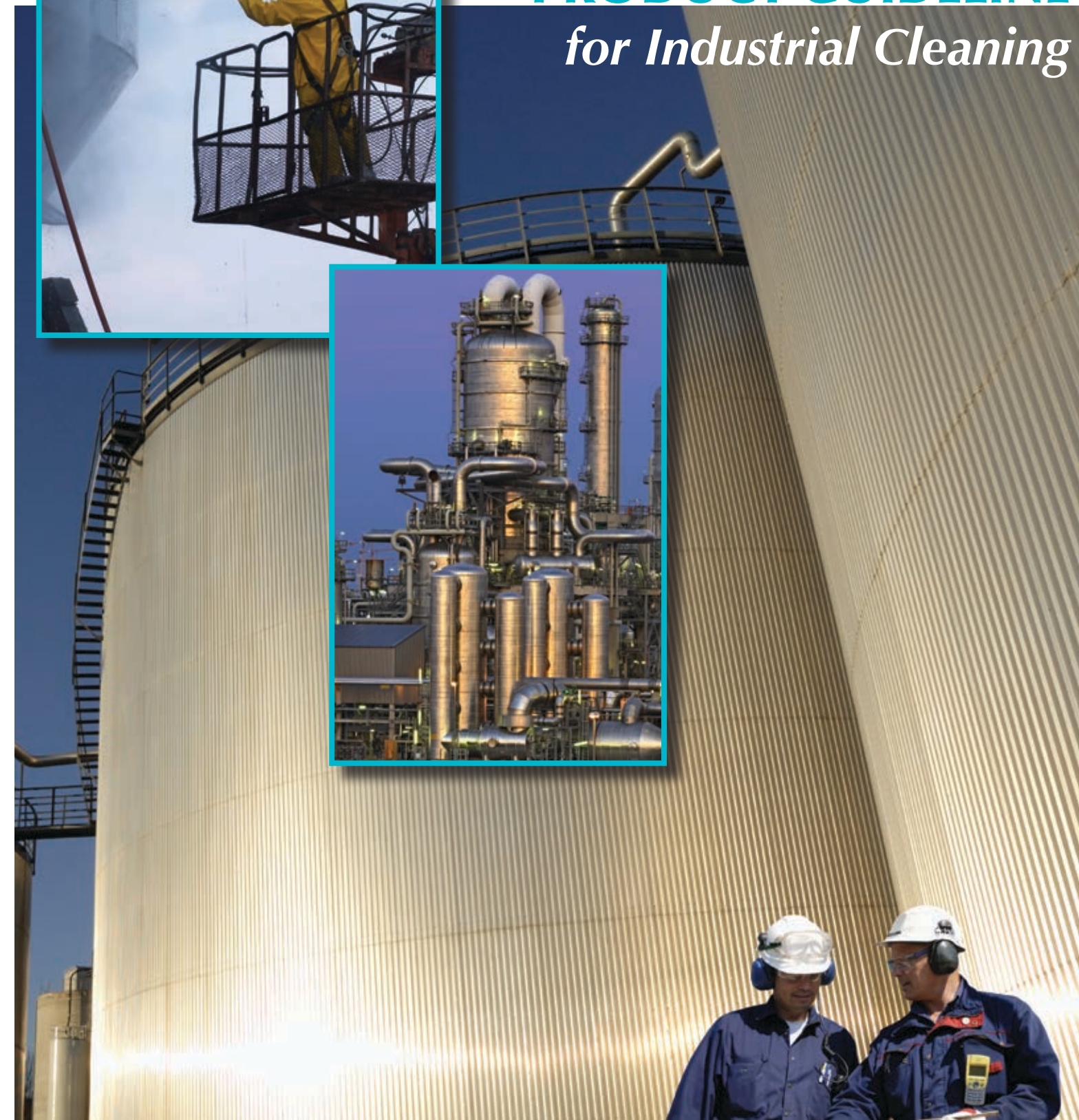
Products	Description	Features and Benefits
<b>IRON SULFIDE DISSOLVER PRODUCT SERIES</b>	Aqueous solutions of THPS for the remediation of both pyrophoric and non-pyrophoric iron sulfide mineral deposition and fines without the associated acid gas emissions. Each product in the series is formulated to overcome specific system challenges to effectively chelate iron sulfide minerals and provide vessel or unit entry with reduced decontamination times.	<ul style="list-style-type: none"> <li>• Non-combustible</li> <li>• Contains added corrosion inhibitor</li> <li>• Product coloration changes with saturation</li> <li>• Wastewater friendly</li> <li>• Dramatically reduces turnaround time</li> <li>• Low toxicity when applied</li> </ul>
<b>PERMANGANATE SOLUTION</b>	4% aqueous solution of potassium permanganate useful for the remediation of finely dispersed iron sulfide mineral deposition.	<ul style="list-style-type: none"> <li>• Product coloration changes with depletion</li> <li>• Reduces turnaround time</li> </ul>

## SULFUR SOLIDS/ODOR REMOVAL

Products	Description	Features and Benefits
<b>OXYBRITE SB PRODUCT SERIES</b>	Aqueous dilutions of hydrogen peroxide, with and without pH adjustment, used for the remediation of polysulfide deposition and other malodorous gas emissions, such as hydrogen sulfide.	<ul style="list-style-type: none"> <li>• Fast decontamination procedures</li> <li>• High pH-adjustment accelerates reaction time with polysulfide deposits</li> <li>• Reduces gas production and temperature increases</li> </ul>
<b>ODOR SORB</b>	Designed to chemically eliminate source odors or prevent their emission into the ambient environment.	<ul style="list-style-type: none"> <li>• Solvent free</li> <li>• Non flammable</li> <li>• Non volatile</li> <li>• Not a masking agent</li> </ul>



## PRODUCT GUIDELINE for Industrial Cleaning



### The West Penetone S.T.A.R. Team

Our technical group provides our customers effective support to ensure that known contaminants are paired with the right chemistry for any task. Establishing and maintaining a collaborative approach with our customers in tackling their operational and maintenance challenges is key to realizing efficiencies and cost savings.

### Shutdowns and Turnarounds

When a plant temporarily halts its operations to carry out maintenance on its equipment, every minute counts. These operations must be accomplished with the greatest efficiency in order to avoid wasting precious time and affecting profitability.

In order to meet and exceed these demanding conditions, West Penetone has set up detailed and comprehensive programs for the maintenance of refining, gas, petrochemical plants. These programs define the equipment and products to be used, as well as the exact procedures for carrying out all the operations efficiently and with complete safety.

West Penetone provides consulting services that are just as efficient as its products. Our experts work with you to understand your needs and then optimally plan and oversee these operations in accordance with the required deadlines.

*Sludge, asphaltene, crude oil, bitumen, H<sub>2</sub>S, LEL, benzene, scale and iron sulfides are controlled or eliminated by our full range of chemical technologies.*



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## DEGREASERS

	Products	Description	Features and Benefits
CITRUS DEGREASERS	<b>CITRIKLEEN</b>	Very efficient for cleaning spills or stains composed of lubricant oils and grease, cutting oils, rubber marks, wax, printing inks, certain adhesives as well as many other deposits.	<ul style="list-style-type: none"> <li>Water emulsifiable</li> <li>Reduces toxic wastes</li> <li>Economical since it is water dilutable</li> </ul>
	<b>CITRIKLEEN CR34</b>	Our fastest penetrating <b>CITRIKLEEN</b> ; penetrates through clay and other soils to lift and degrease faster and better than ever before. Designed specifically for industrial wash bays and heavy industrial areas.	<ul style="list-style-type: none"> <li>Highly effective and fast acting</li> <li>Phosphate and Butyl free</li> <li>Safe on most metal surfaces</li> </ul>
	<b>CITRIKLEEN CA35</b>	All of the benefits of <b>CITRIKLEEN</b> but with increased solvency. Cleans soils such as heavy grease, oils, carbonized deposits, tars, lubes.	<ul style="list-style-type: none"> <li>Reduces or eliminates the need for petroleum distillate based solvents</li> <li>Higher viscosity for longer contact time on surfaces</li> </ul>
	<b>CITRIKLEEN HD</b>	A highly concentrated degreaser and carbon remover that is safe for a variety of metal-based surfaces. Removes Heavy oils and grease, carbonized deposits, tar, used lubricants, etc.	<ul style="list-style-type: none"> <li>Non-corrosive on most metal surfaces</li> <li>Biodegradable</li> <li>Highly concentrated</li> </ul>
SOLVENT DEGREASERS	<b>ACCUSOLVE 289</b>	High distillate grade solvent blend designed for shop or enclosed space degreasing. It provides a longer dwell time for removing stubborn foulant from lines, vessel parts, and other refinery equipment by minimizing the evaporative loss associated with the use of xylene and toluene.	<ul style="list-style-type: none"> <li>Compatible with most metallic and non metallic surfaces</li> <li>Disperses hydrocarbon sludge and foulant accumulation</li> <li>Low odor</li> </ul>
	<b>ACCUSOLVE</b>	Water emulsifiable solvent designed for heavy tasks. It is designed to dissolve difficult to remove deposits, such as: tar, asphalt, heavy petroleum, and carbonized hydrocarbons on surfaces.	<ul style="list-style-type: none"> <li>May be rinsed with water</li> <li>Powerful and fast acting</li> <li>Relatively mild odour</li> </ul>
	<b>COMMANDER</b>	Economical solvent cleaner designed for heavy duty tasks. It removes stubborn deposits such as tar, bitumen, heavy crudes, and carbonized soils from surfaces.	<ul style="list-style-type: none"> <li>Ready to use</li> <li>Cost efficient</li> <li>Powerful and fast acting</li> </ul>
	<b>ENVIROSOL</b>	Heavy duty aromatic blend designed for a variety of heavy duty applications. It removes a variety of stubborn deposits such as bitumen, asphaltenes, resins, and petroleum waxes quickly and effectively.	<ul style="list-style-type: none"> <li>Powerful and fast acting</li> <li>Safe on all metal surfaces</li> <li>Even higher solvency available with <b>ENVIROSOL PLUS</b></li> <li>Thixotropic version available with <b>ENVIROGEL</b></li> </ul>
	<b>RAMSOL HD</b>	A heavy-duty solvent degreaser designed for dispersing heavy hydrocarbon sludge, foulant and asphaltenes as well as for removing hydrogen sulphide in an oil phase trapped in lines, vessels, and other refinery equipment.	<ul style="list-style-type: none"> <li>Contains oil-soluble hydrogen sulfide scavenger</li> <li>Residual product will not contaminate or poison unit when used in catalyst units</li> </ul>
ALKALINE DEGREASERS	<b>AS LIQUID</b>	High pH, industrial strength degreaser designed to provide rapid dispersion and removal of heavy oils or greases, soils, and other organic materials.	<ul style="list-style-type: none"> <li>May be used in automatic foaming systems</li> <li>Solvent free</li> <li>No odor</li> </ul>
	<b>CYCLONE</b>	Versatile, mild alkaline cleaner and degreaser designed to remove a multitude of grease or oils, dirt, debris, and residues safely from a variety of surfaces.	<ul style="list-style-type: none"> <li>Compatible with most metallic and non metallic surfaces</li> <li>High foaming</li> <li>Versatile application methods</li> </ul>
	<b>METASOL</b>	High-foaming degreaser and metal brightener that was specially designed for fin fan cooling systems and heat exchangers.	<ul style="list-style-type: none"> <li>Leaves a "like new" shine on metal surfaces</li> <li>Low viscosity</li> <li>Industrial strength detergency</li> </ul>
	<b>PENBLITZ 688L</b>	Designed for bulk removal of hydrocarbon sludge. PENBLITZ 688L is effective for various types of vessel cleaning.	<ul style="list-style-type: none"> <li>Good for removing sulphides and asphaltenes</li> <li>May be used in hot dip tank applications</li> <li>Capacity for scale and corrosion control</li> </ul>
	<b>WEST FL</b>	Non-foaming alkaline liquid designed for use in recirculating systems as an alkaline or neutralizing procedure.	<ul style="list-style-type: none"> <li>High alkalinity</li> <li>Completely water soluble</li> <li>No residue left after rinsing</li> </ul>



## SCALE & OXIDE REMOVAL

	Products	Description	Features and Benefits
	<b>PENSCRUB A-150</b>	Low-pH scale mitigation aid designed to abate the emission of hydrogen sulfide gas especially where iron sulfide scale is present.	<ul style="list-style-type: none"> <li>Low-fuming</li> <li>Easily diluted</li> <li>Corrosion inhibitor</li> </ul>
	<b>PENSCRUB AG-150</b>	Low-pH scale mitigation aid that controls excessive evolution of hydrogen sulfide gas in pyrophoric and non-pyrophoric iron sulfide remediation procedures employed in post-operational cleaning applications.	<ul style="list-style-type: none"> <li>Contains corrosion inhibitor</li> <li>Controls residual iron scale precipitation</li> <li>Provides rapid scale dissolution</li> </ul>
	<b>PENSCRUB AS-150</b>	Effective replacement for <b>PENSCRUB A-150</b> when hydrogen embrittlement and/or chloride stress cracking, or other forms of acid corrosion are a concern.	<ul style="list-style-type: none"> <li>High acid strength</li> <li>Contains corrosion inhibitor</li> <li>Contains added wetting agents</li> </ul>
	<b>TETRAGARD</b>	Heavy-duty acid cleaner designed for removing bulk accumulations of concrete and accretions of scale from parts, equipment, lines, fixtures, and a variety of other hard surfaces.	<ul style="list-style-type: none"> <li>Contains added corrosion inhibitor</li> <li>Medium foaming</li> <li>Contains added surfactant for uniform surface wetting</li> </ul>
	<b>WEDAC</b>	Designed to remove scale, rust, restore oxidized aluminum surfaces and prime metallic surfaces.	<ul style="list-style-type: none"> <li>Effective on many types of metals</li> <li>May be used with foaming equipment</li> </ul>

## DECONTAMINATION (LEL/VOC REDUCTION AIDS)

	Products	Description	Features and Benefits
	<b>FOAMTUFF</b>	A fast-spreading liquid foam concentrate designed to encapsulate more stubborn non-polar gas contaminants such as benzene in foaming decontamination procedures.	<ul style="list-style-type: none"> <li>Non-flammable</li> <li>No VOC's</li> <li>High H<sub>2</sub>S remediation aid available with <b>SCAVFOAM</b></li> </ul>
	<b>ROC 40</b>	Enzymatic product used for all vessel entry procedures. It penetrates foulant to mitigate benzene and LEL emissions, H <sub>2</sub> S gas and pyrophoric iron. Full surfactant formulation available in <b>ROC 45</b>	<ul style="list-style-type: none"> <li>Wastewater friendly</li> <li>Versatile application methods</li> <li>Near-neutral pH</li> <li>Non-hazardous</li> </ul>
	<b>ROC 55X</b>	Used for liquid phase applications for removal of high H <sub>2</sub> S concentrations as well as for foulant removal and LEL reduction.	<ul style="list-style-type: none"> <li>Winterized formula suitable for up to -49°C (-56,2°F)</li> <li>Useful for effective batch treatment</li> </ul>
	<b>ROC 60VP</b>	<b>ROC 60VP</b> is used in vapor phase applications for removal of high H <sub>2</sub> S concentrations as well as for foulant removal and LEL reduction.	<ul style="list-style-type: none"> <li>Eliminates higher concentrations of H<sub>2</sub>S than <b>ROC 40 /45</b></li> <li>Stable under high temperature</li> </ul>

## H<sub>2</sub>S SCAVENGER

	Products	Description	Features and Benefits
	<b>FORMULA 1</b>	Removes H <sub>2</sub> S contamination in one step for reduction of volatile headspace emissions. Used in tanks or vessels.	<ul style="list-style-type: none"> <li>Winterized formula suitable for up to -50°C (-58°F)</li> <li>Non-corrosive and fast-acting.</li> </ul>
	<b>PENETONE 8500H</b>	Specifically designed to remove hydrogen sulfide from produced gas streams without creating excessive solids precipitation.	<ul style="list-style-type: none"> <li>For use in contact tower sweetening units or through a gas stream</li> <li>Water soluble</li> </ul>
	<b>SCAVEX</b>	Removes H <sub>2</sub> S contamination during chemical circulations. For use in tanks or vessels containing sour fluid atmospheres.	<ul style="list-style-type: none"> <li>Surfactant and corrosion inhibitor</li> <li>Useful for effective batch treatment</li> </ul>
	<b>SCAVEX AG</b>	Removes H <sub>2</sub> S in liquid phase applications where triazine or formaldehyde derivatives are incompatible, unstable or unsuitable.	<ul style="list-style-type: none"> <li>No precipitation by-products</li> <li>Readily biodegradable</li> </ul>
	<b>SCAVEX OS</b>	Removes H <sub>2</sub> S from the oil phase in one step. Also useful for effective batch treatment applications.	<ul style="list-style-type: none"> <li>Can be stored outside</li> <li>Active sludge dispersant</li> </ul>
	<b>SCAVEX VP</b>	Removes H <sub>2</sub> S contamination during vapor and high temperature liquid phase chemical circulation procedures in one step.	<ul style="list-style-type: none"> <li>Contains no added formaldehyde</li> <li>Can be stored outside</li> </ul>

## SURFACTANT BLEND

	Products	Description	Features and Benefits
	<b>LEMON LITE INDUSTRIAL</b>	Heavy duty detergent/degreaser additive designed for general cleaning applications requiring the removal of oils and grease from parts and equipment.	<ul style="list-style-type: none"> <li>Caustic free</li> <li>Phosphate free</li> <li>Solvent free</li> <li>No VOC's</li> </ul>
	<b>PINK ROC</b>	Decontamination additive for vessel cleaning applications requiring the removal of oils and grease and the remediation of LEL gas contamination.	<ul style="list-style-type: none"> <li>No added solvents or harsh alkali ingredients</li> <li>Rapidly diluted to desired concentration</li> </ul>
	<b>WEST SURF 10</b>	Additive designed to improve detergency of blends applied in vessel decontamination.	<ul style="list-style-type: none"> <li>Easily diluted</li> <li>Remediating LEL and H<sub>2</sub>S gas contamination</li> </ul>