

GREENEX™ CSD BIODEGRADABLE COOLING WATER TREATMENT VS HARSH CHEMICALS

	GREENEX™ CSD	HARSH CHEMICALS
Composition	-Contains plant based extracts glucose ALKY POLYGLYCOSIDE(APG) and organic chelating agent to control crystal growth of +/- ions (calcium, carbonate, .etc)specially designed for Simplicity, User and Environment friendly approach...from nature back to nature concept.	-Uses traditional Phosphate type concept with multiple products and program is not biodegradable and not USER and Environment friendly.
Concept of Treatment	-Uses APG & Organics chelating agent for removing old scales providing on-line cleaning by solubilizing +/- ions by breaking down hard deposits into smaller fine pieces. Operates within a much wider window	- Relies on PO ₄ for corrosion and scaling control. -Does not remove old scales on-line and operate within very tight operating window, difficulty in maintaining.
Automatic Dosing and Blow-down Equipment	- Not required. - GREENEX™ CSD can be added neat directly into cooling water sump. - Requires very little blow-down	- Requires metering pumps for continuous dosing. -Also requires automatic bleed-off valve to control TDS and concentration in system

<p>Power supply; other equipment and chemicals</p>	<p>-None.</p> <p>-Does not require softener even with hard water. GREENEX™ CSD is capable to solubilize all +/- ions without forming scales</p>	<p>-</p> <p><i>In case of hard water, softener may be used to reduce hardness.</i></p> <p><i>-Requires electricity to run pumps and salt for regeneration of softener</i></p>
<p>Application & Controls</p>	<p>- GREENEX™ CSD product is recommended to be dosed in neat directly into water sump once per week.</p> <p>-Very minimum or no bleed-off require</p> <p>-Cooling System is encouraged to run at higher cycles of concentration(above 12 cycles)</p> <p>-Minimum manpower supervision required with weekly dosage and minimum bleed-off.</p> <p>-Can be replace harsh chemical in cooling system immediately and no need to discharged cooling water from the system</p>	<p><i>-Needs to dose diluted chemical solution continuously every day by -using metering pumps.</i></p> <p><i>-Requires very frequent bleed-off manually or by using automatic blown-down valve.</i></p> <p><i>-Only allow to operate at low cycles of concentration (6 to 8 cycles) for PO₄ program, high water consumption.</i></p> <p><i>-Requires manpower to monitor constant testing and water chemistry, if not the PO₄ program would not produce desired results.</i></p>

<p>Environmental Issue</p> <p>Human Issue</p>	<p>-Not Known. GREENEX™ CSD product is readily biodegradable and does not harm environment...from nature back to nature.</p> <p>- Not Know. It is User friendly and does not emit any harmful gases</p>	<p>-Discharge harms aquatic and marine life in rivers/canals</p> <p>-When strong acids used for descaling, used solution needs to be neutralised before allowed to discharge to waste treatment plant. Also requires to wear protective gears when handling chemicals.</p>
<p>Overall Effectiveness</p>	<p>-Ability to remove old scales on-line and prevent new scales formation.</p> <p>-Requires less testing & monitoring, designed for USER FRIENDLY.</p> <p>-Requires min. manpower to look after treatment</p>	<p>-PO₄ type treatment unable to remove old scales on-line. Normally recommend off-line descaling with strong inorganic acids.</p> <p>-Requires stringent testing & controls otherwise PO₄ program will scale up system.</p> <p>-In hard water area, softener may be required to soften make-up as PO₄ unable to handle very high hardness.</p>
<p>Benefits</p>	<p>- GREENEX™ CSD biodegradable treatment is capable to handle both SOFT & HARD Water.</p> <p>-Ability to remove scales constantly thus improving heat transfer</p> <p>-Does not require expensive dosing system & automatic blow-down valve.</p>	<p>-Cheap treatment program using traditional PO₄ concept. (Unsuitable for Hard Water)</p> <p>-Easy to sell but may not achieve the desired end results.</p> <p>-Contract normal comes with bi-weekly or monthly testing and reporting.</p>

	<ul style="list-style-type: none"><i>-Improves cleanliness and Approach Temperature.</i><i>-Easy to administer and does not require special attention & manpower.</i><i>-Can be discharged directly to waste treatment plant or directly into canals and rivers without harming aquatic life.</i><i>-Reduces energy consumption significantly by improving heat transfer.</i><i>-Reduced bleed-off also reduces water consumption substantially.</i><i>-</i>	<ul style="list-style-type: none"><i>- Contract may include monthly cleaning of towers.</i><i>-High Energy and water consumption could not be significantly reduced due to poor heat transfer and running at low concentrations.</i>
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