

## Key Performance Advantages

Better corrosion control can lead to:

- Longer equipment life
- Higher energy efficiency
- Lower operating risks and costs



Industrial Water

# WATER TREATMENT SOLUTIONS

## High Performance Products for Treating Water and Controlling Corrosion in Steam Generation Systems

ANGUS produces multifunctional amines for use in low- to medium-pressure (<1,200 psi) steam generation systems, ideal for controlling corrosion. Benefits include:

- Efficient neutralizers
- Effective pH control
- Easily regenerated with low make up
- Effective in both vapor and liquid phases
- Strong affinity to CO<sub>2</sub> preventing carbonic acid formation
- Passivation of steel
- Thermally stable
- Catalyst-free oxygen scavenging
- Low secondary amines
- Less hazardous than morpholine, hydrazine and hydroquinone
- Compatible with other commonly-used treatment chemicals

Product	Chemistry	Function
AMP-90 <sup>®</sup>	2-amino-2-methyl-1-propanol + 10% water	pH adjuster & CO <sub>2</sub> absorber
AMP-95 <sup>®</sup>	2-amino-2-methyl-1-propanol + 5% water	pH adjuster & CO <sub>2</sub> absorber
HYDROGUARD <sup>®</sup> I-15	N-isopropylhydroxylamine (IPHA) – 15% aqueous solution	O <sub>2</sub> Scavenger & Metal Passivator

## Typical Properties

The following are selected properties.  
They are not to be considered product specifications.

	AMP-90	AMP-95	HYDROGUARD I-15
<b>Active ingredients</b>	90% by wt.	95% by wt.	15-16% by wt.
<b>Water</b>	10% by wt.	5% by wt.	84-85% by wt.
<b>Appearance/description</b>	Water-white liquid	Water-white liquid	Water-white liquid
<b>Flash point, closed cup</b>	86°C (186°F), Tag closed cup	83°C (182°F), Tag closed cup	46°C (114°F), Setaf flash closed cup
<b>Fire point, Cleveland open cup</b>	Not tested	Not tested	>100°C (>212°F)
<b>pH (1% aqueous)</b>	11.3	11.3	10.6
<b>Specific gravity @ 25°C</b>	0.949	0.942	1.000
<b>Pounds per gallon @ 25°C</b>	7.91 lb.	7.85 lb.	8.36 lb.
<b>Freezing/Crystallization point</b>	-11 C (12°F)	-2°C (28°F)	-5°C (23°F)
<b>Refractive index</b>	1.4568 @ 20°C	1.4568 @ 20°C	1.3570 @ 25°C

## Product Stewardship

ANGUS encourages its customers to review their applications of ANGUS products from the standpoint of human health and environmental quality. To help ensure that ANGUS products are not used in ways for which they are not intended, ANGUS personnel will assist customers in dealing with environmental and product safety considerations. For assistance, product Safety Data Sheets, or other information, please contact your ANGUS representative at the numbers provided in this document. When considering the use of any ANGUS product in a particular application, review the latest Safety Data Sheet to ensure that the intended use is within the scope of approved uses and can be accomplished safely. Before handling any of the products, obtain available product safety information including the Safety Data Sheet(s) and take the necessary steps to ensure safety of use.

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