



## Introduction:

Many customers have asked questions as to the current use of Reserve Alkalinity (RA) and its value and meaning as a coolant quality evaluation criterion.

## Terminology:

Reserve Alkalinity (RA) is the number of milliliters, to the nearest 0.1 mL, of 0.100 N hydrochloric acid required for the titration to a pH 5.5 of a 10 mL sample of an undiluted, unused coolant, antirust or coolant additive, and unused or used solutions thereof.

## Penray's Recommendation:

1980's vintage coolant specifications, including the GM® 1825-M and 1899-M specifications, called for an RA of 10, min. It is necessary to note that these specifications are no longer active specifications; GM has now moved to advanced coolant technologies that no longer follow these performance specifications.

TMC RP-329, 330 and ASTM specifications D-3306 and 4985 remain current. Unlike the above-mentioned GM specifications, the ASTM specifications are periodically updated and revised to reflect the state-of-the-art in coolant technology. In the past two years, coolant technology has been developed that provides superior corrosion and other cooling system protection at pH and RA values dramatically different from those that the industry was accustomed to. Acknowledging the capabilities of the new technology, ASTM removed the specific RA requirement from both the automotive (D 3306) and the Heavy-duty (D 4985) specifications. Some of the advanced technologies in the marketplace today exhibit low pH and/or RA values. These values should not be interpreted as weaknesses or as a suggestion of compromised quality. Indeed the reverse is true, the best and newest technologies are the lower pH and lower RA chemistries.

Customers are strongly cautioned not to rely on antiquated, obsolete concepts and specifications when purchasing coolant. The vast majority of coolants used or scheduled to be used in America's car, truck and bus factories is from the new family of products. Coolant users who continue to specify RA of 10 and high pH coolant will find themselves out-of-step with the technology, denying themselves of the vastly improved benefits, reduced cost, and positive environmental impact that they offer.

## Summary of Recommendations:

Customers are encouraged to adopt TMC RP-329 and RP-330 specifications for new coolant purchases. This recommendation applies to all vehicles; light, medium and heavy-duty; gasoline, diesel, or gaseous fuels.