

## Refractive index and mixing of Tri-Cool® TC-1

### Refractive Index

A refractometer is used to determine the dilution ratio of Tri-Cool TC-1. The refractometer takes light and bends it through the solution to give a reading on the Brix scale. The Brix scale measures the percent of sugar content in a given aqueous solution. Below is a chart that shows the refractive index vs. dilution ratio for Tri-Cool TC-1 (Fig. 2).

To obtain refractive index using a refractometer:

1. Make sure prism and cover are clean. Clean with a soft moist cloth and then dry thoroughly.
2. Lift cover lid and place 1 or 2 drops of sample on the prism.
3. Gently close cover - avoid air bubbles between prism and cover.
4. Look through the eyepiece and point the refractometer toward any convenient light source.
5. The scale and borderline should be visible (Fig. 1).
6. Adjust the eyepiece for the sharpest image possible.
7. Read the value at the point where the borderline crosses the scale (Fig.1).
8. Refer to graph for actual concentration level of Tri-Cool TC-1 solution (Fig. 2).
9. Clean prism and cover immediately after use.

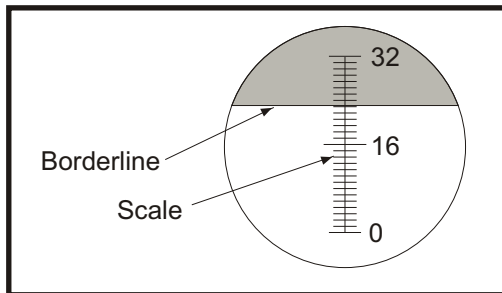


Figure 1

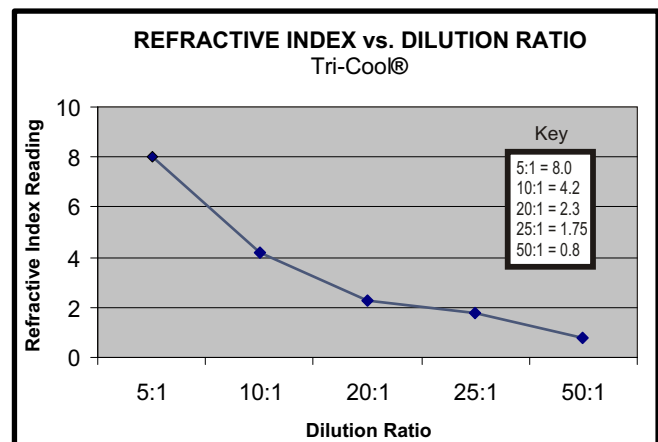


Figure 2

### Mixing

Tri-Cool TC-1 is a premium water based coolant that is easily diluted to the proper ratio with the addition of water. The following steps are designed to optimize the mixing process and provide a consistent dilutions and results. This can be best achieved by adhering to the same mixing process.

#### Proper Mixing Procedures

Proper mixing procedures are critical to the attainment of long coolant life and economical use of coolant concentration related problems. Premixing coolant concentrate with pure water in accordance with the coolant manufactures recommendations assures efficient use of the concentrate.

1. Pour one quart of Tri-Cool TC-1 into a measured container.
2. Turn on a stream of water into a 5 gallon pail. Hardness of water can have an effect on coolant; this may be a problem in your area. To check this please see our Technical Information Sheet "Experiencing rusting on machine surfaces and tools".
3. Pour Tri-Cool TC-1 promptly into the stream of water and finish the pour before 4 gallons of water are in the container.
4. Finish filling pail to approximately 4 ½ gallons and determine the ratio.
5. Allow the foam to settle.
6. Use a refractometer to measure the ratio and compare refractive index to chart.

