



Protecting, maintaining and improving the health of all Minnesotans

Heat Transfer Fluids for Vertical Heat Exchangers September 26, 2011

Minnesota Rules, part 4725.7050 requires that only food-grade or United States Pharmacopeia (USP)-grade propylene glycol may be used as heat transfer fluid in a vertical heat exchanger. No other materials or additives may be used except potable water.

Some propylene glycol products contain small amounts of other chemicals to stabilize or prevent corrosion. The Minnesota Department of Health (MDH) has determined that some of these products meet the intent of the rule. Upon request from a manufacturer, the MDH will review product information for an inhibited propylene glycol to determine if it is safe and acceptable for use in a vertical heat exchanger. Approval of an inhibited propylene glycol is based on manufacturer submission to MDH of documentation identifying the additives/inhibitors and verifying that all ingredients are food grade or USP grade, and listing of the product in the NSF White Book™ listing for nonfood compounds.

Propylene glycol with additives must not be used in a vertical heat exchanger unless the MDH has provided written approval for that specific product.

The following inhibited propylene glycols have been approved for use in vertical heat exchangers:

- **Chill-Pro**, manufactured by Hawkins, Inc. Approved September 2, 2011.
- **Dowfrost**, manufactured by Dow Chemical Co. Approved June 10, 2009.
- **EnviroGard** (previously named and approved as RhoGard Ultra DP), manufactured by Rhomar Water Management, Inc. Approved February 26, 2009.
- **freez-kontr'l FG**, manufactured by Nu-Calgon. Approved September 2, 2011.
- **Fremont 9134FG**, manufactured by Fremont Industries, Inc. Includes a range of propylene glycol dilutions with distilled water from 25 percent (9134FG-25D) to 50 percent (9134FG-50D). Approved September 2, 2009.
- **Intercool P-323**, manufactured by Interstate Chemical Co., Inc. Includes a range of propylene glycol dilutions with de-ionized potable water from 20 percent (Intercool P-323-20) to 50 percent (Intercool P-323-50). Approved October 28, 2009.
- **Safe-T-Therm**, manufactured by Houghton Chemical Corporation. Includes a range of propylene glycol dilutions with potable water from 20 percent (Safe-T-Therm 20 percent) to 60 percent (Safe-T-Therm 60 percent) as well as the full-strength product (Safe-T-Therm Concentrate). Approved November 17, 2009.

In addition to these approved inhibited propylene glycols, any food-grade or USP-grade propylene glycol without additives (other than potable water) is approved by rule, and no formal review or approval by MDH is required. The MDH does not currently maintain a list of food-grade and USP-grade propylene glycols.

If you have any questions, please contact Mr. Ed Schneider in the MDH Well Management Section at 651-201-4595 or ed.schneider@state.mn.us.