



innovative chemical technologies, inc.

Flexibrite TM-300

TECHNICAL DATA SHEET

- ◆ **Functionalized Chelate/Surfactant System Used to Produce a Daily Shower Cleaner.**
- ◆ **Eliminates Hazing Upon Drying. Dries to a Clear, Invisible Protective Barrier.**
- ◆ **Stops Hard Water Spotting Even in the Toughest Water Conditions.**
- ◆ **Prevents Soap Scum and Hard Water Buildup.**
- ◆ **Cleans Soap Scum From Soiled Showers**
- ◆ **No Slippery/Slimy Residue.**
- ◆ **Solvent Free and Formulates to Finished Cleaner Without IPA.**
- ◆ **Zero VOC**
- ◆ **Excellent Calcium/Magnesium/Iron Chelation**
- ◆ **Excellent Soap Scum Dispersability**
- ◆ **Leaves Surfaces Bright and Shining**
- ◆ **Enhances Wetting and Sheeting**
- ◆ **Provides Superior Anti-Fog Properties to Glass and Mirrors.**
- ◆ **Near Neutral pH: Safe on Most Surfaces (Not Recommended for Marble).**
- ◆ **Phosphate-Free**
- ◆ **Environmentally Friendly**
- ◆ **Virtually Odorless: Requires No Fragrance.**
- ◆ **Economical and Easy to Formulate.**

Applications

- ◆ **Shower Cleaner**
- ◆ **Bathroom/Kitchen Sinks and Faucets (Preventative Maintenance Product)**
- ◆ **Toilet Bowl Cleaners**
- ◆ **Bathtub Cleaners**
- ◆ **Rinse Additive to Eliminate Hard Water Spotting**
- ◆ **Outdoor Window Cleaners**
- ◆ **Glass Cleaners**
- ◆ **Preventative Maintenance Products for Production and Storage Tanks, such as, the Food and Beverage Industries**

TECHNICAL INFORMATION

A significant shortcoming of current daily shower cleaners is the haze left on shower surfaces, especially glass and mirrors, once the cleaner has dried. Flexibrite TM-300 eliminates this concern, even in tough water conditions, and leaves shower surfaces bright and shiny. Flexibrite TM-300 formulations eliminate hazing, dry to a clear protective barrier, and provide rapid wetting and sheeting. It has superior cleaning properties and should be considered for virtually any cleaning application. It is alkaline and acid pH stable so it should fit into most any formulation. Flexibrite TM-300 formulations are solvent free, contain zero VOC, and have a near neutral pH. This makes Flexibrite TM-300 based formulations safe to use on bathroom surfaces as well as most any surface with the exception of marble.

PERFORMANCE STUDIES

The following performance studies were conducted on several leading daily shower products as well as the Flexibrite TM-300 formulation. A number of different water sources were evaluated to determine the performance in tough water conditions.

Clarity Test

- ◆ Wet clean mirror or glass tile (12"x12") with tap water.
- ◆ Fully mist surface with formulated cleaner.
- ◆ Allow to completely dry.

Results: The Flexibrite TM-300 formulation left no haze on the mirror or glass. In fact, the Flexibrite TM-300 based formulation left the surface as clear as the original tile before testing.

Simulated Shower Soiling Test

- ◆ Wet clean mirror or glass tile (12"x12") with tap water.
- ◆ Fully mist surface with formulated cleaner and allow to completely dry.
- ◆ Prepare 0.1% sodium oleate solution and spray on surface.
- ◆ Prepare 500 ppm solution of hard water as calcium carbonate (0.055% or 550 ppm calcium chloride) and immediately spray on surface. This forms a soap scum film.
- ◆ Then fully mist surface with formulated cleaner and allow to dry.
- ◆ Observe results.

Results: The Flexibrite TM-300 formulation left no haze on the mirror or glass. In fact, the Flexibrite TM-300 based formulation left the surface as clear and clean as the original tile before testing.

Soap Scum Cleaning Test

- ◆ Thoroughly wet clean mirror or glass tile (12"x12") with soap scum dispersion prepared as follows:
 1. Prepare 0.5% sodium oleate solution.
 2. Prepare 0.11% calcium chloride solution.
 3. Mix equal parts of 1 and 2 to form soap scum dispersion.
- ◆ Dry overnight at room temperature or 30 minutes in an oven at 120 C.
- ◆ Spray once with formulated shower cleaner, holding spray tip 8 inches from tile.
- ◆ Allow to dry overnight.
- ◆ Rinse with cold tap water.
- ◆ Observe results.

Results: Approximately 95 to 99% of the soap scum was removed from the tile in the area that was sprayed after only one treatment.

FORMULARY

<u>Ingredient</u>	<u>% by Weight</u>
Water	96.0 –98.0
Flexibrite TM-300	2.0 - 4.0

pH: 7.5 – 8.0

Add all ingredients in order listed.

- ◆ For optimum performance, start with a clean shower. However, this formulation is an excellent soap scum cleaner without scrubbing. Regular use will clean most soiled showers within 2 weeks.
- ◆ This same formulation produces an outdoor window cleaner with exceptional cleaning, rapid water sheeting, and spot free drying. Simply dilute 60-80:1 by using a garden hose dilution attachment.

Adding Fragrance

- ◆ Use only 100% oil fragrances. Never use a fragrance that has been preblended with a surfactant as this will affect the clarity of the barrier.
- ◆ Add the fragrance to the Flexibrite TM-300 and mix until homogeneous (about 0.2 to 0.25% fragrance on weight of Flexibrite TM-300 may be added. Because Flexibrite TM-300 has such low odor, this amount of fragrance yields a very fragrant finished product).
- ◆ Add the fragranced Flexibrite TM-300 slowly to the water with good agitation.

TYPICAL PROPERTIES

Appearance	Clear, colorless to pale yellow liquid
Density @ 25C	1.07 +/- 0.02 g/ml (9.92 lbs/gal)
pH	7.5 +/- 1.0
Boiling Point	Approximately 100C

PACKAGING/HANDLING

Flexibrite TM-300 is available in bulk,
55 gallon plastic drums (Net Wt.490 lbs) and 5 gallon pails (Net Wt. 40 lbs).
DOT Classification is Non Regulated