

**BIO-SOURCE DB-20** is a fast acting, non-oxidizing biocide based on a 20% solution of the active ingredient DBNPA (Dibromo nitrilo propionamide). This formulation has almost instantaneous antimicrobial activity combined with rapid chemical breakdown resulting in one of the most cost-effective methods of contamination elimination. BIO-SOURCE DB-20 has outstanding environmental properties as it degrades rapidly and naturally. This property has made it the chemical of choice, especially for systems operating under strict environmental and discharge regulations.

**Performance:**

BIO-SOURCE DB-20 biocide offers numerous performance benefits:

- Instantaneous antimicrobial activity as a non-oxidizing slimicide/bactericide
- Kills bacteria, fungi, and algae
- Exclusively for use in non-potable applications
- Compatible with the thinfilm and cellulose acetate membranes
- Degrades rapidly and naturally to comply with strict environmental discharge regulations
- Can be used in conjunction with other applicable cleaners as shown in the Avista cleaner selection guide

**Use Instructions:**

There are two methods for using BIO-SOURCE DB-20 in reverse osmosis applications:

**1. Intermittent feed for "shock treatment" control:**

This procedure allows biocide use only as needed to control fouling. To calculate the dosage of BIO-SOURCE DB-20 in milliliters per minute, use the following equation:

$$\frac{\text{Plant feed flow, gpm} \times \text{desired ppm of BIO-SOURCE DB-20}}{330}$$

To determine the total milliliters of BIO-SOURCE DB-20 that will be required for a treatment, use the following equation:

$$\text{ml / minute BIO-SOURCE DB-20} \times \text{treatment duration ( minutes)}$$

**2. RO membrane cleaner:**

Below are the step-by-step instructions for using BIO-SOURCE DB-20 in a cleaning application:

- a. Fill the cleaning tank to the desired level with either RO or DI water.
- b. Add 50-170 ppm of BIO-SOURCE DB-20 to the cleaning tank.
- c. Recirculate the solution to achieve a thorough mixing.
- d. Recirculate the biocide solution through the RO system for up to 3 hours.
- e. When complete, rinse the system thoroughly with chlorine free RO or DI water.
- f. Flush the system thoroughly.

**Packaging and Storage**

BIO-SOURCE DB-20 is available in 50 pound pails, 275 pound drums, and 500 pound drums. This product should be stored in the original self-venting containers at a temperature below 35°C and out of direct sunlight.

**Properties:**

Appearance:	Light yellow to amber liquid
pH:	2.0 - 4.0
Solubility in Water:	Totally miscible
Bulk Density (lb/gal):	10.3 – 10.6
Flash Point:	None detected (COC)

Avista Technologies, Inc.  
 133 North Pacific Street  
 San Marcos, CA 92069 U.S.A.  
 Telephone: (760) 744-0536  
 Facsimile: (760) 744-0619  
 Web Site: www.AvistaTech.com