

# WQA/ASPE/~~NSF~~ S-803:

## Sustainable Drinking Water Treatment Systems

Second Public Review Draft

June 19, 2017

### 1 Scope

### 2 Terms and Definitions

#### 2.1 Regeneration

The automatically recurring process by which a brine solution is passed through the resin bed of a water softener, replacing calcium and magnesium ions (absorbed by the resin) with sodium ions, in order to replenish the capacity of the resin bed to substitute sodium ions for magnesium and calcium ions in the treated water. Various rinsing and backwash steps using only influent water are usually also included. Unless the system features twin tanks, regeneration must be accomplished when the softener is not in service.

#### 2.1 Proportional Brining

A method of regeneration whereby the volume of brine solution used for each specific regeneration is proportional to the actual percent exhaustion of the resin bed at the time that the regeneration occurs (see "Regeneration").

#### 2.2 Proportional Regeneration

A method of regeneration whereby the volume of water used in the backwash and rinse phases of each specific regeneration is proportional to the actual percent exhaustion of the resin bed at the time that the regeneration occurs (see "Regeneration").

#### 2.4 Reserve Capacity

A percentage of the actual chemical capacity of the softener that is held in reserve, which has the effect of triggering regeneration before the resin bed is completely exhausted (or expected to be exhausted based on volume of treated water). The normal purpose of the reserve capacity is to insure that regeneration can be conveniently scheduled when the consumer is not expected to be utilizing their water supply. Otherwise, regeneration could end up being necessary during normal daytime hours when the consumer requires water usage, which would result in either a denial of water while regeneration is underway, or the consumer being forced to utilize hard water after the resin bed becomes exhausted (but before regeneration can be conveniently scheduled).

#### 2.5 Backwash

A typical phase of the regeneration process where influent water is flushed through the softener in order to clean the resin bed of non-dissolved/ionic contaminants. It is called "backwash" because it is done with the direction of flow counter to the normal flow.

#### 2.6 Cation Resin

Ion Exchange Resins, typically polybenzyl sulfonates, designed for the purpose of exchanging positively charged ions.

#### 2.7 Ion Exchange Media

A treatment media suitable for the purpose of exchanging ions in water. Less desirable ions present in the water are attracted to the media to replace more acceptable ions which are released from the media.

### 2.8 Ion Exchange Resin

Ion Exchange Media typically in the form of a functionalized resin copolymer made of polystyrene and divinylbenzene.

### 2.9 Water Softener

A treatment system that delivers product water with a hardness no greater than 1 grain/gallon.

## 3 General Requirements and Scoring System

### 3.3.2 Conformance to WQA S-801: Sustainable Management

- A. Eligibility for certification under this standard is contingent on the applicant company meeting the requirements of WQA's S-801 Sustainable Management Standard, which evaluates the management practices and overall sustainability performance of the company.

#### ~~Conformance to a Sustainable Management System Standard~~

~~Eligibility for certification under this standard is contingent on the applicant company meeting the requirements of one of the following two standards which evaluate the management practices and overall sustainability performance of the company:~~

- ~~B. WQA/ASPE/ANSI S-801: Sustainable Management~~  
~~C. NSF/WQA/ANSI 375: Sustainability Assessment for Water Contact Products (Management Systems criteria only, as delineated within the NSF/ANSI 375 standard)~~

**Comment [SM1]:** Changes dropped, revert back to original language