
Compressor Cleaning Water Purity Specification for GE Aircraft Derivative Gas Turbines in Industrial Applications

1.1 Scope

This specification establishes the requirements for purified water for use in cleaning the compressor of gas turbine engines where the intent is to restore performance by removing the build up of deposits on compressor components. The water quality defined in this specification applies to water used in both on-line compressor cleaning and crank-soak compressor cleaning.

1.2 Definitions

For the purpose of this specification, the following definitions shall apply:

On-line Compressor Cleaning - A method of removing the build up of deposits on compressor components while the engine is operating. On-line cleaning as accomplished by spraying cleaning solution into the inlet of the engine while the engine is operating.

Crank-Soak Compressor Cleaning - A method of removing the buildup of deposits on compressor components while the engine is motored by the starter. Crank-soak cleaning is accomplished by spraying cleaning solution into the inlet of the engine while the engine is operating unfired at crank speed.

Liquid Detergent - A concentrated solution of water soluble surface active agents and emulsifiable solvents.

Cleaning Solution - A solution of emulsion of liquid detergent and

water or a water and antifreeze mixture for direct engine application. The recommended dilution of liquid detergent and water shall be specified by the liquid detergent manufacturer.

2. Applicable Documents

2.1 Issue of Documents

The following documents shall form a part of this specification to the extent specified herein. Unless a specific issue is specified, the latest revision shall apply.

2.1.1 American Society of Testing and Materials

Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D1192 Equipment for Sampling and Steam

ASTM D1293 Tests for pH of Water

ASTM D4191 Tests for Sodium in Water by atomic Absorbtion Spectography

ASTM D4192 Tests for Potassium in Water by Atomic Absorbtion Spectography

ASTM D5907 Tests for Filterable and Non-Filterable Matter in Water

ASTM D3370 Practices for Sampling Water

3. Requirements

3.1 Sampling Requirements

The sampling shall be in accordance with ASTM D1192 and ASTM D3370. A

minimum sample of one (1) gallon or four (4) liters shall be supplied.

3.2 Chemical Requirements

The water shall meet the following requirements when tested in accordance with the designated test method.

3.3 Filtration Requirements

The water shall contain no particles larger than 100 microns absolute.

	Limit	Test Method
Total matter, ppm, max	100	ASTM D5907
pH	6.5 - 8.5	ASTM D1293
Sodium + potassium, ppm,max	25	ASTM D4191 & ASTM D4192