



# Steam Quality required by Food & Beverage Manufacturers

Are your processes and products free from contamination?  
Is the heat transfer in your processes optimized?  
It may be time to take a look at your steam quality.

**?** Is steam in direct contact with your products?

- NO** Plant steam quality is adequate
- YES** Reduce contamination with filtered steam - improve steam system design and test for contamination regularly.
- YES** Eliminate contamination 100% with clean steam - generate contaminant free steam.

**?** Do you have a HACCP process in place to manage your process and product contamination risk?

- NO** Your process and product may be exposed to contamination risk.
- YES** Good, but...

**?** Do you use FDA approved boiler chemicals?

- NO** Harmful boiler chemicals will pass through your filters and end up in your product.
- YES** How well is the boiler chemical dosage controlled? Did you know that dosages above the FDA recommended levels nullifies the FDA approval? Harmful levels of boiler chemicals will pass through your filters and end up in your product.

**?** Is steam managed in your HACCP?

- NO** Your process and product may be exposed to contamination risk.
- YES** Which parameters in your system are you controlling?
- Boiler water treatment
  - FDA chem. dosage
  - Boiler water level
  - Boiler pressure
  - Auto TDS
  - Separators & steam traps
  - Culinary filters
  - Condensate contamination detection
  - Steam Quality testing

**?** Do you perform clean in place (CIP)?

- NO** No risk of cross-contamination of steam & condensate.
- YES** There is a risk of potential cross-contamination from the CIP that will pass through your filters and end up in your product.

**?** Will it be costly if your products are contaminated?

- NO** -
- YES** Best to treat steam as an ingredient of your products and review all possible contaminants.

**?** Are you satisfied with the visual appearance\* of the condensate sample?

- NO** A visually dirty sample may be an indication of contamination.
- YES** A visually clear sample may still contain chemical contaminants and microbes.

**?** Would you like us to review the contamination risks in your steam system and advise you on how to address them?

- NO** -
- YES** Spirax Sarco will contact you with a proposal to manage your contamination risk

*\*We will provide you with a sample of your condensate.*

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## Water droplets and chemical contaminants in the steam supply can give rise to:

- erosion of pipe and steam equipment
- dangerous water hammer
- contamination of heat transfer surfaces and steam equipment
- poor heat transfer due to much lower enthalpy of evaporation

**?** Are your TDS levels well controlled and within the boiler design parameters?

- NO** You have a high risk of boiler water carry over (foaming), which contains suspended and dissolved solids.
- YES** You have a low risk of boiler water carry over.

**?** Is your boiler operated below its design pressure from time to time resulting in an increased volume and velocity of steam released?

- NO** You have a low risk of boiler water carry over.
- YES** You have a high risk of boiler water carry over (priming), which contains suspended and dissolved solids.

**?** Are your water treatment chemicals dosages well managed and within limits?

- NO** You have a high risk of boiler water carry over (foaming), which contains suspended and dissolved solids.
- YES** You have a low risk of boiler water carry over.

**?** Are ALL your steam lines and steam equipment insulated?

- NO** You are at risk of significant steam condensation in your steam system.
- YES** Steam dryness fraction should be sufficient up to the point of use.

**?** Is your boiler feedwater regularly checked for contamination from other process areas?

- NO** You have a high risk of boiler water carry over (foaming), which contains suspended and dissolved solids.
- YES** You have a low risk of boiler water carry over.

**?** Is your process sensitive to poor heat transfer, e.g. long startup times, poor thermal control, scalding, spoilage, etc?

- NO** –
- YES** Your process may be at risk due to the presence of water droplets and chemical contaminants in your steam.

**?** Is your boiler exposed to a sudden steam demand from time to time resulting in a sudden pressure drop in the Boiler?

- NO** You have a low risk of boiler water carry over.
- YES** You have a high risk of boiler water carry over (priming), which contains suspended and dissolved solids.

**?** Would you like us to perform a Steam Quality test and advise you on how to address the deficiencies?

- NO** –
- YES** Spirax Sarco will contact you regarding a proposal for a Steam Quality test.

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