



BCAS Food and Beverage Grade Compressed Air - Best Practice Guideline

Training Material - Compressed Air Industry

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The following, in the form of Q & A's, is intended to provide those in the compressed air industry with background information on food industry drivers, such as legislation, and the practices to be adopted through management process to the involvement of best practice guidelines.

What is Codex Alimentarius?

The Codex Alimentarius international food standards have become the global reference point for food producers and processors, national food control agencies and the international food trade.

The code has had an enormous impact on the thinking of food producers and processors as well as on the awareness of the end users – the consumers. Its influence extends to every continent, and its contribution to the protection of public health and fair practices in the food trade is immeasurable.

The Codex is the source of both the pre-requisite programme and the hazard analysis and critical control point (HACCP) philosophy and is used as the reference source in this document.

Food regulations introduced around the world all refer back to this primary source. The BCAS Best Practice Guideline enables food producers around the world to comply with all CODEX requirements involving compressed air.

What do the EU Food Regulations promote?

The European Food Regulation identifies the usefulness of good practice guides and asks that Member States shall encourage the development of national guides to good practice for hygiene and for the application of HACCP principles.

The dissemination and use of both national and community guides shall be encouraged. Nevertheless, food business operators may use these guides on a voluntary basis.

What is the best practice guideline?

The best practice guideline is a voluntary guide and may or may not be adopted by the food producer. The guideline expands and clarifies the compressed air requirements identified in existing food/beverage safety standards, guidelines and, in some areas, legislation.

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What are the basic hygiene requirements?

Before the application of HACCP to any food production, the food producer is required to implement a basic hygiene structure for all services and provisions that support the food production process. A food safety management system should start with a strong foundation. That strong foundation consists of procedures that address matters such as the basic operational conditions within the food / beverage operation. These procedures are collectively termed “pre-requisite programmes.”

What is the Pre-Requisite Programme?

Part of the application of HACCP will consider and put in place pre-requisite programs such as good hygiene practices and training. These pre-requisite programs should be well established, fully operational and verified in order to facilitate the successful application and implementation of the complete HACCP system.

Which process does the application of compressed air follow?

Compressed air is seen as a basic operational function (utility) such as water and energy supplies in the food chain. The provision of compressed air is deemed to be a pre-requisite and as such its maintained supply and purity is essential.

How is the guideline implemented?

The strategy to be applied for a pre-requisite programme related to the provision of compressed air shall consider the following;

- a) Identify areas where compressed air is involved with food/beverage
- b) Identify which contaminants may adversely affect the food/beverage
- c) Establish whether the involvement with compressed air is by direct or in-direct contact

The air purity requirements are identified as ‘should’ statements as an encouragement for improvement over time rather than as an immediate, costly fix.

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How is compressed air purity applied?

The best practice guideline sets out the minimum recommendation for compressed air purity in existing and new installations. The guideline identifies acceptable purity values for food/beverage areas. However, consideration should also be given to any specific safety or quality requirements of the site.

Compressed air coming into direct contact or in-direct contact with food/beverage should meet or exceed the classification in Table 1 or Table 2 of the best practice guideline respectively.

How is food safety managed?

Codex Alimentarius provides much of the framework to identify hygiene and process requirements for many food related processes. Their use will enable food processes to be carried out in a safe manner.

Those processes require checks and balances to be applied. In many cases around the world there are national regulatory requirements to be met. The requirements can be met by the application of food management systems.

What is involved in a food management system?

The requirements for a food safety management system need to combine the following generally recognised key elements to ensure food safety along the food chain, up to the point of final consumption:

- Interactive communication;
- System management;
- Pre-requisite programmes;
- HACCP principles.

In addition there is a need for auditing and certification requirements for food manufacture.

Food management systems are provided by third parties such as the British Retail Consortium (BRC) Trading Ltd or the International Standards Organisation through various published standards including EN ISO 22000.

The BRC Global Standard is in many ways a more comprehensive food management tool than ISO 22000 although the use of either should provide the same management result.

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How are food/beverage producers monitored for compliance with food management systems?

Monitoring of compliance with food management systems is done through a system involving third party bodies who provide auditing facilities. The auditing is done according to identified standards such as those operated by BRC or by compliance with ISO 22000.

Third party organisations often called 'Certification bodies' are required to be accredited by their National Accreditation Body, which in the UK is UKAS. In addition they are required to abide by strict requirements for auditor competency, reporting and performance. BRC lays down those requirements for those companies registered with BRC either in the UK or overseas.

For those organisations working to ISO 22000 there is an accreditation document, ISO/TS 22003 that contains requirements for bodies providing certification of the food safety management systems. Those bodies will also have to be accredited by the National Accreditation Body such as UKAS.

Does the best practice guideline identify the fitting of either specific types of equipment or the use of preferred materials of construction?

The best practice guideline generally sets out the goals to be achieved in the form of the air purity requirements. The combination of equipment and materials to be used will depend on an individual situation; therefore any solution offered should bear this in mind.

The solution where very little initial compressed air purity is required, due to the lack of onward control at future processing stages, would differ greatly from a situation where all stages of processing are contained within a very well monitored area.

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How is air purity verified?

The best practice guideline promotes the use of contaminant measurement by those methods identified in the ISO 8573 series. Many of the test methods require sample collection on site and then laboratory measurement.

The main exception to this is testing for water in the form of vapour where there are many on-site methods available including sensors that can be installed within the compressed air system for on-line continuous checking.

The use of indicator tubes is allowed by the guideline, although only to establish that the air supply has not drifted too far away from the required values. Microbiological contaminants, by their very nature need a minimum of 24 hours before any credible answer can be obtained as it is essential to culture the sample in an incubator.

There are many companies that perform contaminant measurement of atmospheric air but in most cases do not offer that service for compressed air. There are a few companies that are developing such services to compressed air.

The ISO working group responsible for the ISO 8573 series is currently working on developing and identifying more user friendly collection/measurement methods.

Does the best practice guideline require the keeping of records?

The keeping of records is considered essential and part of any good management control of a system. The best practice guideline addresses this in clause 10.

Who are EHEDG?

The European Hygienic Engineering & Design Group (EHEDG) is a consortium of equipment manufacturers, food industries, research institutes and public health authorities. It was founded in 1989 with the aim to promote hygiene during the processing and packing of food products.

The EHEDG helps by creating a central, internationally recognised source of excellence by imparting knowledge on hygienic engineering of equipment and by specifying best practices in respect to their hygienic operation, supply and maintenance.

EHEDG is the source for the procedure to be adopted to convert lubricated compressors to operate with food grade lubricants.

The British Compressed Air Society Ltd represents manufacturers, distributors and users of compressors, vacuum pumps, pneumatic tools and allied products.

For a free monthly newsletter, advice on energy saving, education and training, society publications or legislative and technical updates visit the BCAS website.



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