IMPFT121K

Principles of energy transfer in cooling food technology

Overview

This standard is about the principles of energy transfer in cooling food technology. It includes understanding the science of heat transfer in the form of cooling as it is applies in support of food and drink processing.

This standard applies to you if you are a manager, technician or consultant who has responsibility for controlling any cooling technologies employed in the production of food and drink products. It is expected that you will control and support others with regard to the development and implementation of cooling technologies.

Performance criteria

You must be able to: See IMPPO210S Control temperature reduction in food manufacture

Knowledge and understanding

You need to know and understand:

1 the applications of cooling in the food and drink sector
2 both direct and indirect methods of cooling
3 the changes that occur in food and drink products when they are cooled
4 how and why the cooling process is controlled and monitored
5 how energy efficiency is optimised during cooling
6 factors affecting the choice of cooling medium
7 why agitation of the cooling medium can increase cooling effectiveness
8 how foods can be cooled by convection
9 how conversion currents operate in a refrigerator
10 why solid foods cool more slowly than liquid foods
11 why water is a substantially better coolant than air
12 what factors influence the effectiveness of the refrigeration process, ability to cool foods and maintain temperature

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Developed by	Improve
Version Number	2
Date Approved	November 2015
Indicative Review Date	September 2019
Validity	Current
Status	Original
Originating Organisation	Improve
Original URN	Improve
Relevant Occupations	Manufacturing technologies
Suite	Food Technology
Keywords	Food; Energy; Technology; Cook; Cooking; Convection; Temperature