

Revised Application Documentation: Version 4 /28 May, 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Food Industry Capacity & Skill Initiative (FICSI)
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1, Tansen Marg
New Delhi - 110001

Name and contact details of individual dealing with the submission

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List of documents submitted in support of the Qualifications File

1. Career Map of Butter and Ghee Processing Operator - Annexure 1
2. Qualification Pack of Butter and Ghee Processing Operator - Annexure 2
3. List of QP/NOS validating companies – Annexure 3
4. NSDC Human Resource and Skill Requirement Study- Annexure 4

QUALIFICATION FILE SUMMARY

Qualification Title	Butter and Ghee Processing Operator (FIC Q2003)		
Body/bodies which will assess candidates	Mettl, Stamp, IQAG, Skills Mantra, Aspiring Mind		
Body/bodies which will award the certificate for the qualification.	Food Industry Capacity & Skill Initiative (FICSI)		
Body which will accredit providers to offer the qualification.	Food Industry Capacity & Skill Initiative (FICSI)		
Occupation(s) to which the qualification gives access	Butter and Ghee Processing Operator		
Proposed level of the qualification in the NSQF.	Level 4		
Anticipated volume of training/learning required to complete the qualification.	240 hours		
Entry requirements / recommendations.	Preferably Class VIII		
Progression from the qualification.	Dairy Products Processor (Level 5)		
Planned arrangements for RPL.	RPL arrangements and policies are under development.		
International Comparability	Not done as yet.		
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
FIC/N2009 Prepare and maintain work area and process machineries for butter and ghee production	Mandatory	16	4
FIC/N2010 Prepare for production of butter and ghee	Mandatory	32	4
FIC/N2011 Produce butter and ghee	Mandatory	144	4
FIC/N2012: Complete documentation and record keeping related to butter and ghee production	Mandatory	16	4
FIC/N9001: Food safety, hygiene and sanitation while processing food products	Mandatory	32	Common across levels

Please attach any document giving further detail about the structure of the qualification – e.g. a Curriculum or Qualification Pack.

Give details of the document here:

1. Qualification Pack of Butter and Ghee Processing Operator - Annexure 2

SECTION 1

ASSESSMENT

Name of assessment body:

If there will be more than one assessment body for this qualification, give details.

The assessment bodies include Mettl, Stamp, IQAG and Skills Mantra, Aspiring Mind

Will the assessment body be responsible for RPL assessment?

Yes

Give details of how RPL assessment for the qualification will be carried out and quality assured.

The RPL assessment will be based on the approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

Assessment will be done through third parties who will be affiliated to FICSI as an Assessment Body.

The assessment plan will contain the following information:

- What will be assessed, i.e. the competency based on each NOS
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- Criteria for decision making i.e. those aspects that will guide judgements
- Where appropriate, any supplementary criteria would be used to make a judgement on the level of performance

The assessment would be conducted through theory, viva voce and practical.

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as listed in the entry on the structure of the qualification on page 1.

<u>CRITERIA FOR ASSESSMENT OF TRAINEES</u>
Job Role: Butter and Ghee Processing Operator
Qualification Pack: FIC/Q2003
Sector Skill Council: Food Industry Capacity & Skill Initiative (FICSI)

Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Assessable Outcomes	Assessment Criteria	Total Marks	Out Of	Theory	Skills Practical
1. FIC/N2009: (Prepare and maintain work area and process machineries for butter and ghee production)	PC1. Clean and maintain the cleanliness of the work area using approved sanitizers and keep it free from dust, waste, flies and pests		25	10	15
	PC2. Ensure that the work area is safe and hygienic for food processing		10	3	7
	PC3. Dispose waste materials as per organization standards and industry requirements		15	5	10
	PC4. Check the working and performance of all machineries and tools used for the process such as filter, pasteurizer, separator, clarifier, packaging		15	5	10

	machines, etc.				
	PC5. Clean the machineries and tools used with recommended sanitizers following the company specifications and standards		15	5	10
	PC6. Place the necessary tools required for the process		5	2	3
	PC7. Attend to the minor repairs/ faults of all machines, if required		7.5	2.5	5
	PC8. Select and set the machines and tools required for production		7.5	2.5	5
		Total	100	35	65
2. FIC/N2010: (Prepare for production of butter and ghee)	PC1. Read and understand the production order from the supervisor		5	2	3
	PC2. Ensure working and performance of all machineries required for process		10	4	6
	PC3. Report malfunctions of machine, if any, to the supervisor		5	2	3
	PC4. Calculate the process time for effective utilization of machineries and manpower		5	2	3
	PC5. Allot responsibilities/ work to the assistants and helpers		5	2	3
	PC6. Refer process chart/ product flow chart/formulation chart for product(s) produced		5	2	3
	PC7. Check the quality of raw materials by verifying the quality analysis report and assessing its physical parameters		10	5	5
	PC8. Connect pipes between holding tanks and process equipment		15	5	10
	PC9. Assemble fittings, valves, bowls, impeller shaft, strainers and other parts to equipment to prepare for production		15	5	10

	PC10. Start machine and check the working condition and performance of the machine		10	2	8
	PC11. Make minor adjustments and repairs (if required)		10	2	8
	PC12. Keep the tools accessible to attend repairs/faults in case of breakdown		5	2	3
		Total	100	35	65
3. FIC/N2011: (Produce butter and ghee)	PC1. Sterilize the dairy processing equipments before process by opening valves or pumping recommended sterilizing solution and rinse water through pipes		2	0.5	1.5
	PC2. Check the quality of raw material through physical parameters such as impurities, colour, appearance, temperature etc and by verifying the quality report		2	1	1
	PC3. Set and control metering devices or open valves to allow measured volume of milk from holding tank to pass through filter to remove sediment		3	1	2
	PC4. Adjust controls to set speed of the separator, and open valves to allow milk to pass through the separator to separate cream (butter cream) from milk		5	2	3
	PC5. Open valve of the of separator to allow the separated cream into the cream holding tank/bulk tank and stir the butter cream for uniform consistency		3	1	2
	PC6. Check the quality of butter cream by testing the water and fat content		3	1	2
	PC7. Set process parameters like temperature, time of the pasteurizer, turn valves to admit steam, observe pressure and temperature gauge, and open valves to allow cream into		5	2	3

pasteurizer to pasteurize cream				
PC8. Collect the pasteurized butter cream in ageing tank for production of butter		2	0.5	1.5
PC9. Add bacterial culture to the butter cream in the ageing tank following the sop		2	0.5	1.5
PC10. Allow the butter cream to stand in ageing tank for specified time for ageing/ fermentation of butter cream		1	0.5	0.5
PC11. Check the quality of butter cream, check the weight and start pump to move aged butter cream to churner		2	1	1
PC12. Adjust controls to regulate speed of the churner, press switches to start churner		3	1	2
PC13. Stop the churner in specified intervals, open the air vent to release the air from the churner, close the vent and start the churner, repeat this operation until butter (butter popcorn) is formed (in semi-automated units)		3	1	2
PC14. Stop the churner after butter popcorn is formed, observe separation of buttermilk from butter, and pump buttermilk from churner into container/ tank		3	1	2
PC15. Open churner and sprays water (chlorinated) into butter to remove buttermilk residue		3	1	2
PC16. Weigh salt and add manually or prepare salt solution and pump it into the butter popcorn in the churner and close the churner (for production of salted butter)		2	0.5	1.5
PC17. Adjust controls and valves in the churner to maintain pressure in the churner, set the churner speed and start the churner to thicken		3	1	2

the fat molecules				
PC18. Press switches to start extruder of churner to extrude butter/salted butter into mill machine for mixing butter to achieve desired fineness		3	1	2
PC19. Sample butter and test for moisture, butterfat, salt content, texture, aroma, taste to detect any undesirable flavours, and compare color against colour chart		2	1	1
PC20. Transfer butter into the butter moulding and wrapping machine, load primary packaging material, set controls and start machine to shape measured quantity of butter into blocks and wrap in the primary packaging material		2	0.5	1.5
PC21. Load secondary packaging material in the packaging machine and set batch code, date code, packaging quantity etc and start the packaging machine to pack the wrapped butter and periodically check the weight of the packed product		3	1	2
PC22. Sample packed product and transfer to quality lab for analysis and conformance to standards		1	0.5	0.5
PC23. Transfer packed product into finished product storage area, and store product maintaining suitable storage conditions following the SOP		2	1	1
PC24. Check the quality of raw material (butter) through physical parameters		2	1	1
PC25. Set and control metering devices to transfer/extrude measured quantity of butter blocks/butter into the clarifying tank		3	1	2
PC26. Open valves to admit steam to heat clarifying tank to melt and		2	0.5	1.5

remove moisture from butter			
PC27. Pump melted butter to ghee boiler, set and maintain stirrer speed and temperature of the ghee boiler to heat melted butter to specified temperature for production of ghee	5	1.5	3.5
PC28. Position strainers across filling vents of the receiving tank	1	0.5	0.5
PC29. Turn valve to allow ghee to pass through strainers to remove scum	2	0.5	1.5
PC30. Open the valves to collect ghee in the receiving/holding tank	2	0.5	1.5
PC31. Adjust controls to set temperature of holding tank to cool ghee to specified temperature	2	0.5	1.5
PC32. Check the quality of ghee through physical parameters like appearance, colour, texture, aroma, taste etc	3	1	2
PC33. Load packaging material in the packaging machine, set batch code, date code, packaging quantity etc, start the packaging machine to pack measured quantity of ghee and periodically check the weight of the packed product	3	1	2
PC34. Sample packed product and transfer to quality lab for analysis and conformance to standards	2	1	1
PC35. Transfer packed product into finished product storage area, and store product maintaining suitable storage conditions following the sop	2	1	1
PC36. Report malfunction/discrepancies/concerns to department supervisor for immediate action	1	0.5	0.5
PC37. Turn valves or pump recommended sterilizing solution and rinse water through pipes for	4	1	3

	CIP of tanks and processing equipment following SOP				
	PC38. Clean the work area using recommended cleaning agents and sanitizers		2	0.5	1.5
	PC39. Attend minor repairs/faults of all machines (if any)		2	0.5	1.5
	PC40. Ensure periodic (daily/weekly/monthly/quarterly/half yearly/annual) maintenance of all machines and equipment following the SOP or suppliers instructions/manuals		2	1	1
		Total	100	35	65
4. FIC/N2012: (Complete documentation and record keeping related to butter and ghee production)	PC1. Document and maintain records of raw material processed such as name of raw material, tag details, supplier details, receiving date/ date of manufacture, expiry date, quality parameters, internal quality analysis report, etc., as per company standards		10	6	4
	PC2. Maintain record of observations (if any) related to raw materials		5	3	2
	PC3. Load the raw materials details in ERP for future reference		5	3	2
	PC4. Verify the documents and track from finished product to raw materials, in case of quality concerns and during quality management system audits		5	3	2
	PC5. Document production details such as the products handled, production sequence, equipments and machinery details, efficiency and capacity utilization of equipment		10	6	4
	PC6. Document process details such as type of raw material used, process parameters, temperature, time, pressure, etc. (as applicable) for entire production in process chart or production log for all products		15	9	6

	produced				
	PC7. Document batch size, production yield, and wastage of raw materials, energy utilization and final products produced		10	6	4
	PC8. Maintain record of observations (if any) or deviations related to process and production		5	3	2
	PC9. Load the production and process details in ERP for future reference		5	3	2
	PC10. Verify documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits		5	3	2
	PC11. Document and maintain records on the types of finished products produced		3	2	1
	PC12. Document the finished products details such as batch number, time of packing, date of manufacture, date of expiry, other label details, primary and secondary and packaging materials for all finished products, storage conditions, etc. As per company standards		7	4	3
	PC13. Maintain record on observations or deviations (if any) related to finished products		5	3	2
	PC14. Load the finished product details in ERP for future reference		5	3	2
	PC15. Verify the documents and track from finished product to ingredients, in case of quality concerns and for quality management system audits		5	3	2
		Total	100	60	40
5. FIC/N9001 (Food safety, hygiene and sanitation for	PC1. Comply with food safety and hygiene procedures followed in the organisation		5	2	3

processing food products)

PC2. Ensure personal hygiene by using of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.
PC3. Ensure hygienic production of food by inspecting raw materials, ingredients, finished products, etc. for compliance to physical, chemical and microbiological parameters
PC4. Pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations
PC5. Clean maintain and monitor food processing equipment periodically, using it only for specified purpose
PC6. Use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required
PC7. Follow housekeeping practices by having designated area for materials/tools
PC8. Follow industry standards like GMP and HACCP and product recall process
PC9. Attend training on hazard management to understand types of hazards such as physical, chemical and biological hazards and measures to control and prevent them
PC10. Identify, document and report problems such as rodents and pests to management
PC11. Conduct workplace checklist audits before and after work to ensure safety and hygiene
PC12. Document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system

6	1	5
5	2	3
10	4	6
5	2	3
10	4	6
5	2	3
10	4	6
5	1	4
5	1	4
5	1	4
4	1	3

	PC13. Determine the quality of food using criteria such as aroma, appearance, taste and best before date, and take immediate measures to prevent spoilage		5	2	3
	PC14. Store raw materials, finished products, allergens separately to prevent cross-contamination		5	2	3
	PC15. Label raw materials and finished products and store them in designated storage areas according to safe food practices		5	2	3
	PC16. Follow stock rotation based on FEFO / FIFO		10	4	6
		Total	100	35	65

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

During the industry interactions carried out while creating occupational maps and prioritization of job roles for Qualification Pack development, the mentioned qualification was indicated as a key requirement by the industry. Governing Council of FICSI shared the final approval for the development of the role. The qualification has also been validated and its need endorsed by some of the leading industry players such as Mother Dairy, Mehsana District Cooperative Milk Producers' Union Ltd. popularly known as Dudhsagar Dairy, Paras (VRS Foods Ltd), etc.

In addition, the NSDC Human Resource and Skill Requirement study has indicated a strong growth for the dairy products segment considering that India ranks first in the world in production of milk. The same was endorsed through multiple meetings with key stakeholders in this segment and a workshop. Meetings were held with Mr. Ram Mohan Rao (General Manager- Mother Dairy- Dairy segment), Mr. Praveen Agarwal (Gopaljee Dairy), etc. and inputs were taken from various cooperatives including Dudhsagar Dairy which is one of the largest dairies in India.

Milk and milk products account for a significant 17 percent of India's total expenditure on food. The major growth drivers of the milk and milk products sector are increasing per capita income, increasing population and high per capita consumption of milk, which leads to greater demand for high-value dairy products, such as cottage cheese and yogurt.

Evidence of the qualification is also supported by 32 validations. The complete list of validating companies has been enclosed as an annexure to the Q file.

What is the estimated uptake of this qualification and what is the basis of this estimate?

As per the NSDC Human Resource and Skill Requirement study, the projected size of Dairy Products till the year 2022 is Rs. 2597 billion (CAGR of 11.4%). The incremental human resource requirement in Dairy Products is expected to be 68,000 with demand in the organized sector being 12,000 (annual).

What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

The qualification discussed above is checked for any duplication across sectors. Given the qualification is niche to Food Processing sector, there is no duplication or pre-existing similar qualifications.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

The comments, feedback and suggestions were collected through interaction with industry during December '14 to August'15. The same will be compiled and justifiable changes will be incorporated in the next/updated version of the QP. This QP is set to be revised post 15th September, 2016.

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here:

- List of QP NOS validating companies- Annexure 3
- NSDC Human Resource and Skill Requirement study – Annexure 4

SECTION 3

SUMMARY EVIDENCE OF LEVEL

Level of qualification: Level 4

Summary of Direct Evidence (from learning outcomes):

The job activities are exhaustively studied and their outcomes are evaluated to understand their mapping with the NSQF framework. The same had been reviewed and validated by sector skill council and industry representatives.

Summary of other evidence (if used):

Butter and Ghee Processing Operator – QP FIC/Q 2003					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
The job holder is responsible for operating various dairy processing machineries to produce butter and ghee. This involves working in familiar, predictable, routine, situation of clear choice such as preparing and maintaining work area and process machineries, sterilizing dairy equipment's, setting and controlling metering devices, setting process parameters, adjusting controls, etc. in order to produce butter and ghee.	The job holder is expected to have factual knowledge of field of knowledge or study. For example, the job holder is expected to have knowledge of types of raw materials (cow milk, goat milk, buffalo milk etc.) and various types of dairy products, various types of ingredients used for producing dairy products, types of machineries used for processing each type of product, handling all processing machineries,	The job holder is expected to carry out routine and repetitive activities in a narrow range of application, using appropriate rule and tool. For instance, the job holder has to produce butter cream by sterilizing equipment's, checking quality of raw material through physical parameters, setting metering devices, adjusting controls, etc.; produce butter by adding bacterial culture, stopping churner at	The job holder is expected to communicate with clarity, have basic arithmetic skills and a basic understanding of political and natural environment. For instance, s/he should be able to note the information communicate, note the readings of process parameters, write information documents to internal departments/ internal teams, read and interpret the process flow chart for products produced,	The job holder is responsible for only own work and learning. S/he is a skilled worker who carries out activities after reading and understanding the production order, refer to the process chart/ production flow chart/ formulation chart for production of butter and ghee and ensure working and performance of required machineries and tools for the process. Hence, this role qualifies for Level 4. It does not comprise of	4

<p>Hence, it qualifies as a Level 4 role. Since it does not involve several choices to be made even in a familiar context, the role does not qualify for Level 5.</p>	<p>knowledge on sanitizers and disinfectants, food safety and hygiene laws, etc. Since all the above mentioned areas are related to factual knowledge of field of knowledge, the role qualifies for Level 4.</p>	<p>regular intervals, etc.; producing ghee as per the defined SOPs and carrying out post production cleaning and regular maintenance of equipment's. All these activities are mostly repetitive and have a narrow range of application, hence qualifying the role for a Level 4.</p>	<p>effectively communicate with team members and cross department teams on the issues faced during process. Hence, this role qualifies for Level 4.</p>	<p>any supervisory activities.</p>	
<p>Level 4</p>	<p>Level 4</p>	<p>Level 4</p>	<p>Level 4</p>	<p>Level 4</p>	<p>Level 4</p>

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

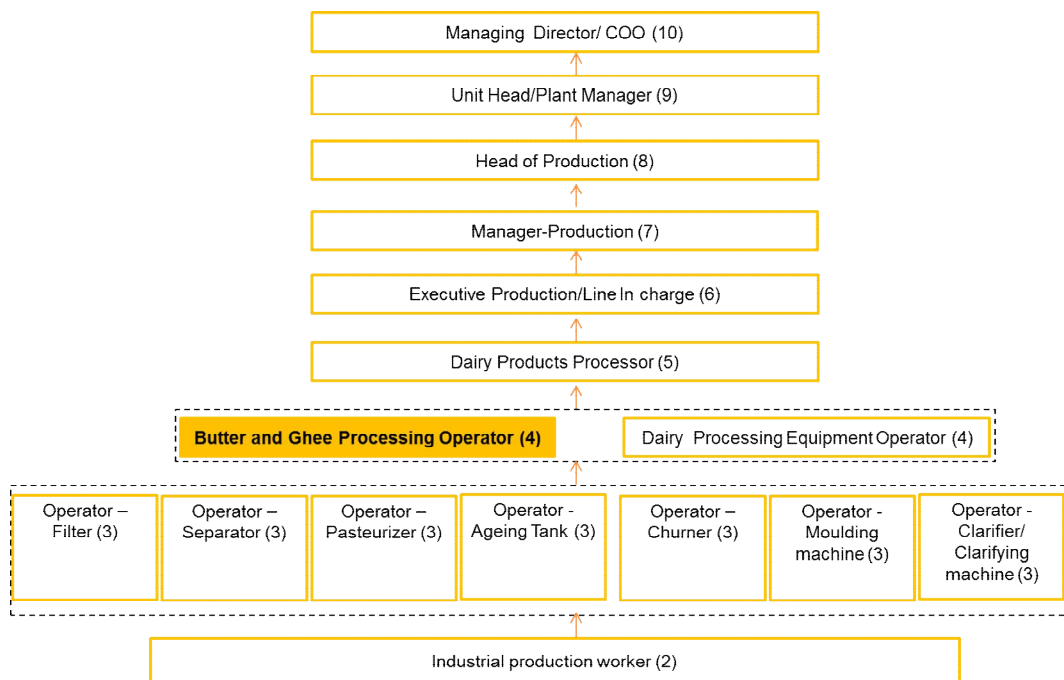
What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

1. Discussing the growth trajectory within each occupation after studying organisational charts of various industry players across small, medium and large scale organizations.
2. Exploring various lateral career opportunities for the discussed qualification
3. Ensuring that there is a clear role up in terms of performance criteria qualification experience and skill requirement from lower NSQF Level to higher levels in the hierarchy.

Please refer to the career path as per Annexure 1 which clearly defines the career path.

Please attach any documents giving further information about any of the topics above. Give details of the document(s) here:

Annexure 1: Career Map of Butter and Ghee Processing Operator



Annexure 2: Qualification Pack of Butter and Ghee Processing Operator (separate file)

Annexure 3: List of QP/NOS validating companies (separate file)