NSDA Reference
To be added by NSDA

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

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

Name and contact details of individual dealing with the submission

Name: Ms. Mallika Verma

Position in the organisation: Chief Executive Officer

Address if different from above: Address same as above

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List of documents submitted in support of the Qualifications File

1. Career Map of Dairy Products Processor - Annexure 1
2. Qualification Pack of Dairy Products Processor- 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	Dairy Products Processor (FIC Q2001)
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	Dairy Products Processor
Proposed level of the qualification in the NSQF.	Level 5
Anticipated volume of training/learning required to complete the qualification.	240 hours
Entry requirements / recommendations.	Preferably Class X
Progression from the qualification.	Executive Production/Line In Charge (Level 6)
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/N2001Prepare and maintain work area and process machineries for processing dairy products	Mandatory	16	5
FIC/N2002 Prepare for processing dairy products	Mandatory	32	5
FIC/N2003 Process dairy products	Mandatory	108	5
FIC/N2004 Complete documentation and record keeping related to processing dairy products	Mandatory	16	5
FIC/N9001 Food safety, hygiene and sanitation for processing food products	Mandatory	32	Common across levels
FIC/N9004 Manage and lead a team	Mandatory	36	5

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 Dairy Products Processor- 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.

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role: Dairy Products Processor

Qualification Pack: FIC/Q2001

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/N2001 (Prepare and maintain work area and process machineries for processing dairy products)	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, homogenizer, pasteurizer, separator, clarifier, packaging		15	5	10

	machines, etc.				
	PC5. Clean the machineries and tools used with recommended sanitizers following the organization 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		7.5	2.5	5
		Total	**100**	**35**	**65**
2. FIC/N2002 (Prepare for processing dairy products)	PC1. Read and understand the production order from the supervisor		10	4	6
	PC2. Check the availability of raw materials, packaging materials, equipment and manpower		5	2	3
	PC3. Plan production sequence by • Grouping products of the same type • Take measures in order to avoid CIP after each product • Plan maximum capacity utilization of machineries • Consider the process time for each product • Plan efficient utilization of resources/manpower • Prioritize urgent orders		15	5	10
	PC4. Calculate the raw materials, ingredients, packaging materials and manpower requirement for the completing the order		5	2	3
	PC5. Calculate the batch size based on the production order and machine capacity		5	2	3
	PC6. Calculate the raw material requirement (considering the process loss) to produce the required quantity of finished product(s)		5	2	3

	PC7. Ensure working and performance of all machineries required for the process		7	2	5
	PC8. Calculate the process time for effective utilization of machineries and manpower		7	2	5
	PC9. Plan batch size considering full capacity utilization of machineries		3	1	2
	PC10. Plan to utilize machineries for multiple products without affecting the quality of finished products, and to optimize production and saving energy		3	1	2
	PC11. Allot responsibilities/ work to the assistants and helpers		5	2	3
	PC12. Refer to the process chart/ product flow chart/formulation chart for product(s) produced		2	0.5	1.5
	PC13. Weigh the raw materials and ingredients required for the batch		2	0.5	1.5
	PC14. Check the conformance of raw material quality to organisation standards by verifying the quality analysis report from the supplier / internal lab and through analysis of physical parameters		5	2	3
	PC15. Connect pipes between holding tanks and process equipment		5	2	3
	PC16. Assemble fittings, valves, bowls, plates, disks, impeller shaft, and other parts to equipment		5	1	4
	PC17. Start machine and check the working condition and performance of the machine		5	1.5	3.5
	PC18. Make minor adjustments or repairs (if required)		5	2	3
	PC19. Keep the tools accessible to attend repairs/faults in case of breakdown		1	0.5	0.5
		Total	**100**	**35**	**65**
3. FIC/N2003 (Process	PC1. Read and understand the		2	1	1

dairy products)	production order				
	PC2. Receive milk from the raw material storage area/warehouse/holding tanks		2	0.5	1.5
	PC3. Check and conform the quality through physical parameters (impurities, colour, appearance, temperature etc) and by verifying the quality report		3	1.5	1.5
	PC4. Set and control metering devices to allow measured volume of milk for processing		3	1	2
	PC5. Open valves to pass measured quantity of milk through filter to remove sediment		3	1	2
	PC6. Adjust controls of the separator (like speed of spinner/agitator), and open valves to allow the milk to pass through the separator to separate cream from milk (skim milk)		6	2	4
	PC7. Set the homogenizer for required fat level in milk, and open valves to pass milk through homogenizer to produce standardized milk		6	2	4
	PC8. Set steam pressure and temperature of the pasteurizer, turn valves to allow steam, observe pressure and temperature, and open valves to allow milk into pasteurizer for pasteurization of milk		6	2	4
	PC9. Turn valve to circulate refrigerant through coils of the chilling tank to cool milk until packing		3	1	2
	PC10. In continuous and fully automated process, set controls in plc to allow milk to pass through filter to remove sediments, through separator to separate cream from milk, through homogenizer to produce standardized milk, pasteurizer to pasteurize milk and chilling tank to cool milk		6	2	4

	PC11. Open valve of the of separator to allow the separated cream into the cream holding tank		3	1	2
	PC12. Turn valve to circulate refrigerant through coils/jacket of the cream holding tank to keep the cream chill		3	1	2
	PC13. Set steam pressure and temperature of the pasteurizer, turn valves to allow steam, observe pressure and temperature, and open valves to allow cream into pasteurizer for pasteurization of cream for further processing into milk products like butter, ghee etc		10	4	6
	PC14. Weigh ingredients such as skim milk powder, starter culture, acid, stabilizer, emulsifiers, flavours etc		4	1	3
	PC15. Pump or add weighed quantity of ingredients into milk, set and maintain process parameters like temperature in the machine to produce dairy products like toned milk, flavoured milk, curd, paneer, ice-cream etc. following SOP		10	3	7
	PC16. Check the quality of the milk and milk products during various stages of process to conform its quality to organisation standards		5	2	3
	PC17. Load the packaging material in packaging machine, set the packaging machine for volume, weight, batch/date code etc and start packaging machine to pack milk and milk products		3	1	2
	PC18. Label the packed product as per organisation standards		3	1	2
	PC19. Check the weight of packed dairy products for conformance to organisation standards		3	1	2
	PC20. Sample the packed products and sent to quality lab for analysis and conformance to specifications and standards of the organisation		2	1	1

	PC21. Store the product as per organisation standards		2	1	1
	PC22. Report discrepancies/concerns to department supervisor for immediate action		2	1	1
	PC23. Turn valves to pump recommended sterilizing solution and rinse water through pipes for CIP of tanks and processing equipment following SOP		4	1	3
	PC24. Clean the work area using recommended cleaning agents and sanitizers		2	0.5	1.5
	PC25. Attend minor repairs/faults of all machines (if any)		2	0.5	1.5
	PC26. 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/N2004 (Complete documentation and record keeping related to processing dairy products)	PC1. Record details of all raw materials, packaging materials used such as milk type (cow/buffalo/goat), source, collection centre, receiving date, expiry date, quality parameters of milk, ingredient details like supplier name, receiving date/ date of manufacture, expiry date, supplier quality document, internal quality analysis report, etc. As per company standards		10	6	4
	PC2. Maintain record of observations (if any) related to raw materials (including ingredients), packaging materials		5	3	2
	PC3. Load the raw material 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		5	3	2

	management system audits				
PC5.	Document production plan with details such as product details, production sequence, equipments and machinery details, efficiency and capacity, utilization of equipment, etc.		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 produced		15	9	6
PC7.	Document batch size, raw material used, yield after each stage of process, wastage, energy utilization and final products produced		10	6	4
PC8.	Maintain record on observations (if any) or deviations related to production and process		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 raw materials, in case of quality concerns and for quality management system audits		5	3	2
PC11.	Document and maintain records on 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, secondary and other 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 raw materials, 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 processing food products)	PC1. Comply with food safety and hygiene procedures followed in the organisation		5	2	3
	PC2. Ensure personal hygiene by using of gloves, hairnets, masks, ear plugs, goggles, shoes, etc.		6	1	5
	PC3. Ensure hygienic production of food by inspecting raw materials, ingredients, finished products, etc. for compliance to physical, chemical and microbiological parameters		5	2	3
	PC4. Pack products in appropriate packaging materials, label and store them in designated area, free from pests, flies and infestations		10	4	6
	PC5. Clean maintain and monitor food processing equipment periodically, using it only for specified purpose		5	2	3
	PC6. Use safety equipment such as fire extinguisher, first aid kit and eye-wash station when required		10	4	6
	PC7. Follow housekeeping practices by having designated area for materials/tools		5	2	3
	PC8. Follow industry standards like GMP and HACCP and product recall process		10	4	6
	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		5	1	4

	PC10. Identify, document and report problems such as rodents and pests to management		5	1	4
	PC11. Conduct workplace checklist audits before and after work to ensure safety and hygiene		5	1	4
	PC12. Document and maintain raw material, packaging material, process and finished products for the credibility and effectiveness of the food safety control system		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**
6. FIC/9004 (Manage and lead a team)	PC1. Ensure that the team is aware of the schedule and job expectations on a daily basis		12	4	8
	PC2. Involve the team in regular meetings to communicate information intended for them		12	4	8
	PC3. Ensure communication to the team on any changes in policies/ processes by the organization through required verbal/ written mechanisms		12	4	8
	PC4. Ensure participation of the team in various engagement initiatives organized by the organization		12	4	8
	PC5. Counsel and address issues among the team for any work related		12	4	8

	issues				
	PC6. Support the manager in deployment of the team as per production schedule and the organizational norms and guidelines		10	4	6
	PC7. Ensure periodic training of the team and support the team by delivering trainings		10	3	7
	PC8. Share knowledge of processes, techniques and products with the team to enhance their skill levels		10	4	6
	PC9. provide feedback to the manager pertaining to performance of the team		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 5

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):

Dairy Products Processor – QP FIC/Q 2001					
Process required	**Professional Knowledge**	**Professional Skills**	**Core Skills**	**Responsibility**	**Level**
The job holder is responsible for processing milk to produce dairy products. This requires with well-developed skill with clear choice of procedures in a familiar context such as receiving milk from raw material storage area checking the quality of milk and milk products during various stages of the process, labelling the packed product. Hence, it qualifies as a Level 5 role. Since it does not demand a wide range of	The job holder is expected to have knowledge of facts, principles, processes, and general concepts in a field of work and study. For example, the job holder is expected to have knowledge of types of raw materials (milk of various animals), production process, process parameters, types of machineries used in processing, quality parameters, storage parameters. Since all the above	The job holder is expected to possess a range of cognitive and practical skills required to accomplish tasks and solve problems, to ensure proper production of all kinds of dairy products. For instance, the job holder has to check and conform the quality of raw materials, ensure the metering devices are set correctly, the products and being labelled and stored as per organisation standards, knowledge on organizational norms and guidelines,	The job holder is expected to possess desired mathematical skills, understanding of social, political and some skill of collecting and organizing information, communicatio n as s/he reports directly to the line in charge. For instance, planning production of dairy products, planning equipment utilization, organizing raw material and equipments for processing dairy products. The job holder is expected to support the manager in	The job holder is expected to take responsibility for own work and learning and also take responsibility for the technicians and operators. For example, the job holder needs to plan production, ensure that equipment and manpower utilization for processing of all dairy products, is well planned and that the team is well aware of the production schedule and job expectations on a daily basis. Hence, this role qualifies for	5

specialized technical skill and working around non-standard practices, it does not qualify as a Level 6 role.	mentioned areas are related to knowledge of facts, principles, processes and general concepts, the role qualifies for Level 5.	how to share feedback with team members, etc. The job holder has to ensure that the team is aware of the schedule on a daily basis and that there are no issues within the team. Since this role requires practical skills to accomplish tasks, it qualifies as a Level 5 role.	deployment of the team as per the production schedule, ensure periodic training of the team and manage the team. Since this role requires collecting and organizing information and decent communicatio n skills, it qualifies as a level 5 role.	Level 5. Since the job holder is not fully responsible for other's work and learning, it has not been placed at Level 6.	
Level 5	Level 5	Level 5	Level 5	Level 5	Level 5

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

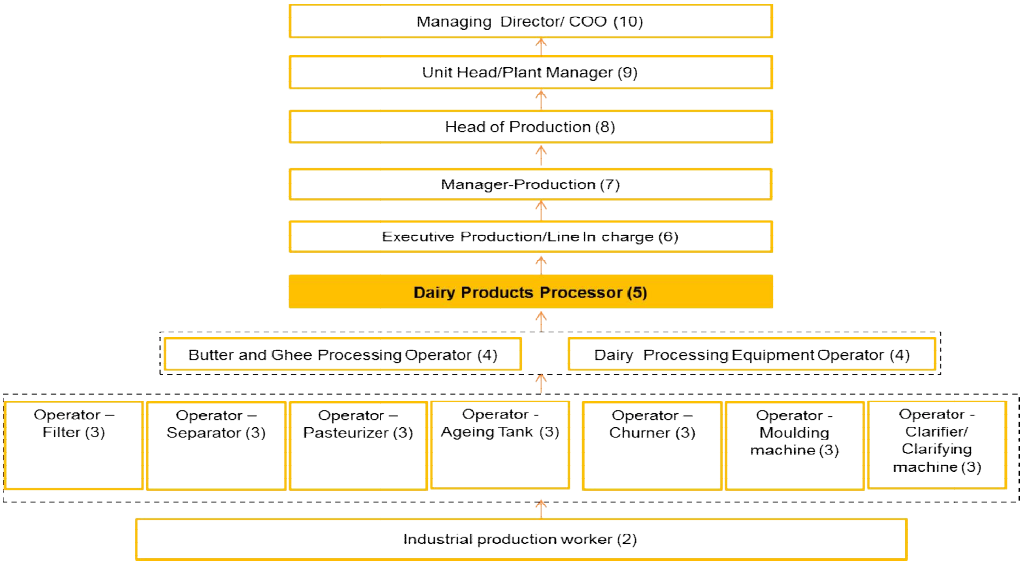
What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

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 Dairy Products Processor



Annexure 2: Qualification Pack of Dairy Products Processor (separate file)

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