

CONTACT DETAILS OF THE AWARDING BODY FOR THE QUALIFICATION

Name and address of awarding body: Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai

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. Qualification Document – Plastics Product Manufacturing
2. Curriculum/ Syllabus
3. Training delivery Plan
4. Criteria for Assessment of Trainees
5. Occupational Map
6. Composition of core committee for QP Development order, DCPC, MoCF, GOI
7. Presentation of 2nd core group committee meeting along with Minutes of meeting approved by members
8. Assessment Process flow
9. Documents supporting need of the Qualification:
 - a. Report of the Coordination Committee address the issue related with Human Resources/ Skilled manpower requirement of Industry- Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India
 - b. A Report on Human Resource and Skill requirement for the Chemicals and Pharmaceutical sector (2022) by NSDC.
 - c. Brief report of Chemicals and petrochemicals Industry in India, April 2015, Corporate Catalyst India Pvt Ltd, Page 4
 - d. Report on Indian Plastics Industry 2013-17, edition 2, Nov 2014, PlastIndia Foundation.
 - e. Indian Plastics Industry – Vision 2012, Leverage Plastic, A report by CRISIL
 - f. Potential of Downstream Plastics Industry in North India, 26 June 2012, Knowledge and Strategy paper by Tata Strategic management Group & FICCI

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- g. Potential of plastics industry in Northern India with special focus on Plasticulture and Food Processing- 2014. A report on Plastic Industry by Tata Strategic management Group & FICCI.
- h. Plastic Industry in India a BPF Overview for PlastIndia International Exhibition 2012, New Delhi
- i. Porters Five force Analysis of the Plastics Industry by Santanu Mandal, International Journal of Multidisciplinary Research, Vol 1, Issue 7, November 2011, ISSN 2231 5780
- j. Industry Engagement certificate in preparation of learning outcomes and Job Role Identification in Petrochemicals sector

QUALIFICATION FILE

SUMMARY

Qualification Title:

Plastics Product Manufacturing Operator

Nature and Purpose of the qualification:

A CIPET trade certificate for Plastics Product Manufacturing Operator and main purpose of the Qualification is to get acquainted with the Plastics product manufacturing process and get opportunity to work in Industry.

Body/bodies which will award the qualification:

The Academic Cell – HO, Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai.

Body which will accredit providers to offer courses leading to the qualification:

The Academic Cell – HO, Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai.

Body/bodies which will be responsible for assessment:

The assessment is being carried out at individual Centre level. Training Assessment Wing in Head Office (HO) of Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Guindy, Chennai is responsible for overall assessment.

Occupation(s) to which the qualification gives access:

Operator Occupation in Plastics Manufacturing industries

Proposed level of the qualification in the NSQF:

Level 4

Anticipated volume of training/learning required to complete the qualification:

960 Notional hours

Entry requirements / recommendations:

Minimum qualification – 8th Standard, Minimum age - 18 years completed.

Progression from the qualification:

The Plastics Product Manufacturing Operator with experience can become Production

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Supervisor in the Plastics Industries.

Planned arrangements for the Recognition of Prior learning (RPL):

RPL arrangements are being developed and will be informed in due course of time.

International comparability where known: It will be carried out in next phase as comparability is being verified.

Date of planned review of Qualification: 27.08.2019

Format Structure of the Qualification:

Title and Identification code of component	Mandatory/ Optional	Estimated Size (Notional Hours)	NSQF Level
1. CPC/N1101: Familiarization with basic concepts, job requirements & basic related process.	M	32	4
2. CPC/N1102: To know about different plastic material	M	80	
3. CPC/N1103: To operate the Injection moulding machine, Ancillary equipments & its trouble shooting	M	250	
4. CPC/N1104: To operate the extrusion machine like Pipe, Film, Raffia etc & its trouble shooting	M	240	
5. CPC/N1105: Operate the Blow moulding machine & its trouble shooting	M	220	
6. CPC/N1106: To practice & maintain safe and good work environment.	M	80	
7. CPC/N1107: Maintaining 5S in the work premises	M	26	
8. CPC/N1108: Entrepreneurship in Injection Moulding	M	32	
Total		960	

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SECTION 1

ASSESSMENT

Body/Bodies which will carry out assessment:

A Separate department/ body -Training Assessment Wing of Central Institute of Plastics Engineering and Technology (CIPET), Ministry of Chemicals and Fertilizers, Department of Chemicals and Petrochemicals, Govt. of India, Head Office, Guindy, Chennai.

Will the assessment body be responsible for RPL assessment?

RPL arrangements are being developed and will be informed in due course of time.

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:

With uniformity and setting of learning outcomes for different Jobs Roles the assessment of candidates will be at learning outcome level. Assessment criterion has been defined for each learning outcome and it includes both theoretical and practical skills on which the candidate will be assessed. The question suite which will be used to check the skills of the trainee would include

- **Theoretical test suite** – Will include multiple choice questions, audio-video question etc. which will test the trainee on his knowledge of the subject
- **Practical Knowledge suite** – Practical knowledge can be tested through Assessor driven evaluation/test, Situational Judgment Tests etc to test practical core competence. A mix of these would be able to evaluate the trainee on his practical knowledge of the Qualification Document.

Assessment strategy:

- Assessment criteria for Qualification Document have been developed. Each Learning Outcome have separate marks for Theory and Practical Skills.
- The Training Assessment Wing will have assessors who will not be associated with training activities and will be provided training on the said work. Thus it will ensure that the assessment carried out is fair and consistent.
- Set of question bank developed to assess the theoretical and practical knowledge. To ensure the quality, each trainees get the unique set of question
- Student has to score minimum marks separately for theoretical and practical skill and overall percentage should also be 50% for theory and 70% for practical.
- Empanelment of subject matter expert as assessor to assess trainee specifically on practical skills
- Assessments are preferably conducted by written examination papers in English/regional languages according to the requirement.
- It has been ensure that TP/trainer should not be present during assessment

Summative Assessment:

Based on the Total Marks allotted for the specific subject, formal evaluation shall be conducted. Based on secured marks, candidates shall be declared pass or fail.

Steps undertaken for summative assessment:

1. Based on Completion of Batch, Evaluation Schedule shall be prepared

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2. Identified Assessor is nominated for Evaluation
3. Setting up of separate Question Paper for Theory & Practical Examination
4. Conduct of examination as per the schedule
5. Evaluation & Certification

Evidence Collected during Assessment: Theoretical Answer Sheets, Practical Exam Sheets, Evaluation Sheets, Jobs produced during practical Exams.

Protocol for Selection of Assessors:

- The Assessors should have the minimum qualification: Degree in Engineering.
- The Assessors should have minimum 5 years of Experience in the relevant field.

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ASSESSMENT EVIDENCE

1. Criteria for assessment for each Qualification Document will be created by CIPET.
2. Each Assessable outcome (AO) will be assigned marks proportional to its importance in Learning Outcome and few performance criteria may be allotted marks in combine.
3. Each Learning Outcome will be assessed both for theoretical knowledge and practical which is being proportionately demonstrated in the table below.
4. The assessment for the theory part will be based on knowledge bank of questions created by CIPET which will contain multiple choice theory questions and Practical question database with mark allotment criteria.
5. To pass the Qualification Document, every trainee should score a minimum of 50 % in Functional and all Generic Learning Outcome's.
6. In case of successfully passing only certain number of Learning Outcome's, the trainee is eligible to take Subsequent assessment on the balance Learning Outcome's to pass the Qualification Document.

Title of the Component: Plastics Product Manufacturing Operator

Assessable outcome		Assessment criteria for the outcome		
LO	Assessable outcome Description	Theory	Practical	Total
1. CPC/N1101: Familiarization with basic concepts, job requirements & basic related process.	AO1. Discuss the work order (work output) required from the process and with the supervisor	1	2	3
	AO2. Refer all components / process related documents to understand dimensions and properties of the required work output	1	2	3
	AO3. Comprehend the process requirements in terms of temperature of the heater, hydraulic pressure/ air pressure/ vacuum pressure, rotating speed of the screw pressure, injection time, refilling time, blowing time etc. as mentioned in the Work Instruction/ SOP/ Control Diagrams	1	2	3
	AO4. Refer the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors	2	2	4
	AO5. Knowhow about the conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document/ SOP manual	2	4	6
	AO6. Set the various parameters like temperature of the heaters, hydraulic pressure/air pressure/ vacuum pressure, rotating speed of the screw, screw pressure, regulating current, flow of coolant/ water etc. before starting the process as per the parameters are mentioned in the Work Instructions/ SOP manual	2	4	6
	AO7. Refer the raw material like plastics granules, bonding additives etc. required for executing the activity	2	4	6
	AO8. Check the required material is available before starting the process	2	4	6

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	AO9. Ensure the type of Mould /Die required for executing the required conversion operation and ensure that the same is available for moulding operations	2	4	6
	AO10. Check the availability of spare parts for continuous operation of machine	1	4	5
	AO11. Check mould / Die are cleaned properly & no foreign material is entrapped in parts of mould/die.	1	4	5
	AO12. Ensure cleaning of the other moulding machine tools, auxiliaries(if any)	1	4	5
	AO13. Ensure cleaning of the area around the machine for any oil, grease, water etc	1	4	5
	AO14. Consult with superiors in case of any doubt/clarification	2	4	6
	AO16. Report completion of work to superiors	1	2	3
	AO17. Maintain good interpersonal relations with superiors & fellow operators.	1	2	3
	AO18. maintain Discipline in work place	1	2	3
	AO19. Coordinate with other department person for getting their support for work.	1	1	2
	Sub total	25	55	80
2. CPC/N1102 : To know about different plastic material	AO1. Discuss about the type of raw material being used in the industry & for work order required for the process and with the supervisor	2	6	8
	AO2. Refer all material related documents to understand properties of the required work output and able to identify the material	2	6	8
	AO3. Comprehend the process requirements for the Plastics material in terms of temperature of the heater, rotating speed of the Screw, pressure, injection as mentioned in the Work Instruction / SOP / Control Diagrams	2	6	8
	AO4. Discuss the melting temperature, processing temperature etc. for plastic raw material	2	8	10
	AO5. Discuss the processing characteristics of the plastics material being used for conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document / SOP manual	2	8	10
	AO6. Ensure that the required material is available before starting the process	2	8	10
	AO7. Ensure that the plastics material is blended with requisite additives	2	8	10
	AO8. Ensure that machine / mould / Die are cleaned properly & no foreign material is entrapped in parts of machine / mould / die.	2	8	10
	AO9. Ensure cleaning of the materials spilled around the machine	2	4	6
	AO10. Ensure cleaning of the area around the machine for any oil, grease, water etc	2	3	5
		Sub total	20	65

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3. CPC/N1103: To operate the Injection moulding machine & its trouble shooting	AO1. Plan work schedule in concurrence with Superior	0.5	2	2.5
	AO2. Obtain and check the data on the job card and carry out functions in line with the responsibilities of job role	0.5	2	2.5
	AO3. Ensure availability of data sheet, manual, work instructions	1	2	3
	AO4. Check the power supply, hydraulic oil level, water connections	1	2	3
	AO5. Ensure availability of the tools ,materials & ancillary equipments for the work	1	2	3
	AO6. Setup the equipment & machineries as per the job requirement	1	2	3
	AO7. Update and develop knowledge of the products	1	2	3
	AO8. Plan for Minimum wastage & its safe disposal	1	2	3
	AO9. Work in conformance to legal requirements, organizational policies and procedures	1	4	5
	AO10. Ensure that the mould is ready & having no problem in dry run	1	4	5
	AO11. Check material is available for production. If required arrange for pre drying	1	4	5
	AO12. Check the availability & readiness of ancillary equipments like chiller, mould Temperature controller, hopper loader, Cooling towers etc	0.5	4	4.5
	AO13. Load the material and pigment (if required) in the hopper	0.5	4	4.5
	AO14. Set the parameters of the machine i.e temperature, pressure, speed etc	0.5	4	4.5
	AO15. Check the temperature on the barrel with respect to set temperature	0.5	4	4.5
	AO16. Conduct trial run to get sample piece once machine is set	0.5	2	2.5
	AO17. Adjust parameters unless getting final product	0.5	2	2.5
	AO18. Visual check the final product	0.5	2	2.5
	AO19. Define accepted products and defective products as per approved plan	0.5	2	2.5
	AO20. Carry out post molding operation during the cycle time run such as. trimming, apply protective tapes, putting labels on each product for identification	0.5	2	2.5
	AO21. Store the final product in specified area	0.5	2	2.5
	AO22. Clean the machine & equipments at regular interval	0.5	2	2.5
	AO23. Work in compliance with specified health and safety standards	0.5	2	2.5
	AO24. Do the preventive maintenance of machines & ancillary equipments	1	2	3
	AO25. Coordinate with maintenance department for resolving breakdown maintenance in minimum possible time.	1	2	3
	AO26. Identify Root cause analysis of moulding defects	1	2	3
	AO27. Analyze of data sheets available in department	1	2	3
	AO28. Taking all corrective & preventive action	1	2	3
	AO29. Reporting the problems caused by machines to	1	2	3

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	superior, when not resolved by operator.			
	AO30. Report defects in the moulds that one do not have the authority to repair	1	2	3
	AO31. Report major processing defects beyond control of operator	1	2	3
	AO32. Keeping records of machine log book, data sheet of machine parameter	1	2	3
	AO33. Keep documents related to incoming & outgoing material	1	2	3
	AO34. Meet targets & goals for production	1	2	3
	AO35. Minimize defects in final product	0.5	2	2.5
	AO36. Follow quality system to get better product	0.5	2	2.5
	AO37. Keep work area clean & systematic	0.5	2	2.5
	AO38. Comply to safety & health guidelines & rules	0.5	2	2.5
	Sub total	29	90	119
4. CPC/N1104: To operate the extrusion machine & its trouble shooting	AO1. Planning work schedule in concurrence with Superior	0.5	2	2.5
	AO2. Obtain and check the data on the job card and carry out functions in line with the responsibilities of job role	0.5	2	2.5
	AO3. Ensure availability of data sheet, manual, work instructions	0.5	2	2.5
	AO4. Check for power supply, oil level in gear box, water connections	0.5	2	2.5
	AO5. Ensure availability & functioning of the tools ,materials & ancillary equipments I like Air Compressor, Cooling Tower, High Speed Mixer etc for the work	0.5	2	2.5
	AO6. Setup the equipment & machineries as per the job requirement	0.5	2	2.5
	AO7. Update and develop knowledge of the products to be produced	0.5	2	2.5
	AO8. Plan for Minimum rejection & its safe reuse/disposal	0.5	2	2.5
	AO9. Work with the Safety aspects of machine operation	0.5	2	2.5
	AO10. Work in conformance to legal requirements, organizational policies and procedures	1	2	3
	AO11. Check material is available for production. Compounding / Color blending	1	2	3
	AO12. Check the availability & readiness of ancillary equipments like air compressor, hopper loader, dehumidifier, Cooling towers etc	1	4	5
	AO13. Load the material in the hopper	1	4	5
	AO14. Set the parameters of the machine temperature, speed etc	1	4	5
	AO15. Check the temperature on the barrel with respect to set temperature	1	4	5
	AO16. Conduct trial run to get extruded sample once machine is set	1	4	5
	AO17. Adjust parameters unless getting final product	1	4	5
	AO18. Visual check of final product	1	4	5
	AO19. Define accepted products and defective products as per approved plan	1	4	5
	AO20. Corona treatment & printing, if required	1	4	5

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	AO21. Store the final product in specified area	1	4	5
	AO22. Clean the machine & equipments at regular interval	1	4	4.5
	Work in compliance with specified health and safety standards			
	AO23. Preventive maintenance of machines & ancillary equipments	1	2	4.5
	AO24. Coordination with maintenance department for resolving breakdown maintenance in minimum possible time.	1	2	3
	AO25. Root cause analysis of extrusion defects	1	2	3
	AO26. Analysis of data sheets available in department	1	2	3
	AO27. Taking all corrective & preventive action	0.5	2	2.5
	AO28. Reporting the problems caused by machines to superior, when not resolved by operator.	0.5	2	2.5
	AO29. Report defects in the moulds that one do not have the authority to repair	0.5	2	2.5
	AO30. Report major processing defects beyond control of operator	0.5	2	2.5
	AO31. Keeping records of machine log book, data sheet of machine parameter	0.5	2	2.5
	AO32. Documents related to incoming & outgoing material	0.5	2	2.5
	AO33. Meet targets & goals for production	0.5	2	2.5
	AO34. Minimize defects in final product	0.5	2	2.5
	AO35. Follow quality system to get better product	0.5	2	2.5
	AO36. Keep work area clean & systematic	0.5	2	2.5
	AO37. Comply to safety & health guidelines & rules	0.5	2	2.5
	Sub total	27	96	123
5. CPC/N1105: To operate the Blow moulding machine & its trouble shooting	AO1. Discuss the process, their types, operations involved	1	2	3
	AO2. Discuss the work requirements for the process and with the supervisor	1	2	3
	AO3. Refer all components / process related documents to understand dimensions and properties of the required work output	1	2	3
	AO4. Refer the process requirements in terms of tools / mould / die required, temperature of the heater according to plastics material being used, Hydraulic / pneumatic pressure / rotating speed of the screw, Parison formation, Parison Programming, Blowing time etc. as mentioned in the Work Instruction / SOP / Control Diagrams Clearly understanding the do's and don'ts of the blow molding process as defined in SOPs / Work Instructions or as defined by supervisors.	1	2	3
	AO5. Refer the do's and don'ts of the blow molding process as defined in SOPs / Work Instructions or as defined by supervisors.	1	2	3
	AO5. Discuss the conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document / SOP manual	1	2	3
	AO7. Discuss the raw material like plastics granules,	1	4	5

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	bonding additives etc. required for production			
	AO8. Ensure that the required material with enough stock is available before starting the process	1	4	5
	AO9. Ensure the type of Mould / Die required to complete the conversion operation and ensure that the same is available for moulding operations	1	4	5
	AO10. Ensure the availability of spare parts for continuous operation of machine	1	4	5
	AO11. Refer the troubleshooting methods of the blow molding process. Knows the quality defects observed in blow molding, their causes and remedies	1	4	5
	AO12. Set the parameters to ensure manufacturing of good product.	1	4	5
	AO13. Ensure that mould / Die are cleaned properly & no foreign material is trapped in parts of mould/die.	1	4	5
	AO14. Ensure cleaning of the other moulding machine tools, auxiliaries (if any)	1	4	5
	AO15. Ensure cleaning of the area around the machine for any oil, grease, water etc	1	2	3
	AO15. Ensure cleaning of the area around the machine for any oil, grease, water etc	1	2	3
	AO15. Ensure cleaning of the area around the machine for any oil, grease, water etc	1	2	3
	AO18. Report major processing defects beyond control of operator	1	2	3
	AO19. Keeping records of machine log book, data sheet of machine parameter	1	2	3
	AO20. Keep Documents related to incoming & outgoing material	1	2	3
	AO21. Meet targets & goals for production	1	2	3
	AO22. Minimize defects in final product	1	2	3
	AO23. Follow quality system to get better product	1	2	3
	AO24. Keep work area clean & systematic	1	2	3
	AO25. Comply to safety & health guidelines & rules	1	1	2
	Sub total	25	65	90
6. CPC/N1106: To practice & maintain safe and good work environment.	AO1. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	1	1	2
	AO2. Identify areas in the plant which are potentially hazardous/ unhygienic in nature	1	1	2
	AO3. Conduct regular checks with support of the maintenance team on machine health to identify potential hazards due to wear and tear of machine	1	1	2
	AO4. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc	1	1	2
	AO5. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations	1	2	3
	AO6. Create awareness amongst other by sharing	1	2	3

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	information on the identified risks			
	AO7. Support the Safety team and the supervisor in creating the risk mitigation plan	1	2	3
	AO8. Follow the instructions given on the equipment manual describing the operating process of the equipment	1	2	3
	AO9. Follow the Safety, Health and Environment related practices developed by the organization	1	2	3
	AO10. Ensure relevant safety board's/ signs are placed on the shop floor	1	2	3
	AO11. Operate the machine using the recommended Personal Protective Equipment (PPE) and ensure team members also use the related PPEs at the workplace	1	1	2
	AO12. Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc.	1	1	2
	AO13. Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques	1	1	2
	AO14. Maintain high standards of personal hygiene at the work place	1	1	2
	AO15. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.	1	1	2
	AO16. Inform appropriately the medical officer/ HR in case of self or an employee's illness of contagious nature so that preventive actions can be planned for others	1	1	2
	Sub total	16	22	38
7. CPC/N1107 Maintaining 5S in the work premises	AO1. Follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and un- necessary items are not cluttering the workbenches or work surfaces.	1	1	2
	AO2. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions	1	1	2
	AO3. Follow the technique of waste disposal and waste storage in the proper bins as per SOP	1	1	2
	AO4. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places	1	1	2
	AO5. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions	1	1	2
	AO6. Ensure that areas of material storage areas are not overflowing AO7. Properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required	2	1	3
	AO8. Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	1	1	2
	AO9. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards	1	1	2

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	AO10. Follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	1	1	2
	AO11. Check that the items in the respective areas have been identified as broken or damaged	1	0.5	1.5
	AO12. Follow the given instructions and check for labeling of fluids, oils. Lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.	1	0.5	1.5
	AO13. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions	1	0.5	1.5
	AO14. Check whether safety glasses are clean and in good condition	1	0.5	1.5
	AO15. Keep all outside surfaces of recycling containers are clean	1	0.5	1.5
	AO16. Ensure that the area has floors swept, machinery clean and generally clean. In case of cleaning, ensure that proper displays are maintained on the floor which indicates potential safety hazards.	1	0.5	1.5
	AO17. Check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up	1	0.5	1.5
	AO18. Ensure workbenches and work surfaces are clean and in good condition	1	0.5	1.5
	AO19. Follow the cleaning schedule for the lighting system to ensure proper illumination	1	0.5	1.5
	AO20. Store the cleaning material and equipment in the correct location and in good condition	1	0.5	1.5
	AO21. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene	1	0.5	1.5
	AO22. Follow the daily cleaning standards and schedules to create a clean working environment	1	0.5	1.5
	AO23. Attend all training programs for employees on 5 S	1	1	2
	AO24. Support the team during the audit of 5 S	1	1	2
	AO25. Participate actively in employee work groups on 5S and encourage team members for active participation	1	1	2
	AO26. Follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions	1	1	2
	Sub total	26	19	45
8. CPC/N1108 Entrepreneurship in Injection moulding	AO1. Planning and Budgeting with reference to various components of Injection Moulding.	2	0.5	2.5
	AO2. Keep books of accounts and various transactions.	1	0.5	1.5
	AO3. Arrange for financial assistance from various quarters in the light of various schemes available in setup for Injection Moulding.	1	0.5	1.5
	AO4. Ascertain the prices of various inputs and products from the market.	1	0.5	1.5
	AO5. Assess the influence of various quality parameters of	1	1	2

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	products on the product pricing.			
	AO6. Establish cordial relations with various clients for the benefit of industry.	1	0.5	1.5
	AO7. Assess the needs and requirement of the clients and assess one's own unique selling proposition.	1	0.5	1.5
	AO8. Extract critical market information that is otherwise not in the public domain.	1	1	2
	AO9. Choose appropriate buyer in a given situation of market parameters	1	1	2
	AO10. Identify best ways of attracting market price for one's produce	1	1	2
	AO11. Ensure quality before and during the sale activity to ensure good returns.	1	1	2
	Sub total	12	8	20
	Total	180	420	600
<p>Means of assessment 1: The assessment comprise of -</p> <ul style="list-style-type: none"> • Theory Assessment • Viva voce • Practical assessment 				
<p>Means of assessment 2: Pass/Fail- The Pass mark of theory written assessment is 50% and for viva and practical assessment is 70%. The candidate has to pass separately in Theory and Practical.</p>				

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SECTION 2

EVIDENCE OF LEVEL

Title /Name of Qualification/Component: Plastics Product Manufacturing Operator Level: 4			
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF Level descriptors	NSQF Level
Process	<p>Plastics Product Manufacturing Operator is expected to ensure housekeeping and safety in the plastics processing area and select the correct process, parameter etc he/she has to-</p> <ul style="list-style-type: none"> • To ensure availability of consumables and plastics materials for production in sufficient quantity as per production plan/operators instructions. • Clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by operator. • Check availability of the personal protective equipments (PPE) like Gloves, Goggles etc. • Understand the molding/production procedure and process to be adopted for completing the work order from the operator by referring the Work Instruction document/ SOP manual. • Ensure that the required material is procured from the store before starting the process • Understand the raw material, process required for executing the required operation and ensure that the same is available for operation. • If raw material, mould etc is not available collect the Mould/die from tool room/ storage. • Add the raw material in the machine using material loader or by manual feeding. • Ensure cleaning of the other auxiliaries tools, (if any) before the initiation of the moulding and trimming process 	<p>Plastics Product Manufacturing Operator – job requires limited range of activities which are routine and predictable like availability of consumables, safety PPE, raw material used, basic machine Parts and its functions etc.</p> <p>He has to collect the Raw material, Mould from tool room/ storage area.</p> <p>He should understand the raw material like plastics granules, fillers, bonding additives etc. Required for executing the activity.</p> <p>Plastics Product Manufacturing Operator is responsible for the work in familiar, predictable, routine which justifies the pegging of Level 4.</p>	4

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	<ul style="list-style-type: none"> • Ensure cleaning of the area around the apparatus for any oil, grease, combustible substances etc. so as to prevent any accident • Understand the raw material like plastics granules, fillers, additives etc. required for executing the activity • Confirm self - understanding to the operator once the query is resolved so that all doubts & queries can be resolved before the actual process execution 		
Professional knowledge	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> • General Principle of moulding procedure, process knowledge, machine startup & shutdown procedures, moulds loading and unloading procedure. • Types of different plastics materials, additives and grades for different plastics products. • Different types of tools & machinery to process the plastics and trim the output • Identification of various defects in products produced in the various plastics processing machineries. 	<p>Plastics Product Manufacturing Operator person should understand and know basic facts a, process, principle of etc</p> <p>Plastics Product Manufacturing Operator is having the factual knowledge of the required field which justifies the pegging of Level 4.</p>	
Professional skill	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> • Types of plastics like thermoplastics and the additives & grades to be used tonnage and capacity of the machine being operated. • Different types of tools and machinery to process the plastic and trim the output • Various types of cooling systems and their properties. • How to perform moulding machine safety check • Hazards and safety aspects involved in tape production and usage of relevant PPEs • Safety procedures to be adopted to complete mould removal process • Detect problems in day to day tasks: Support operator in using specific 	<p>Plastics Product Manufacturing Operator – should recall general principles of hand lay out, spray lay out and process knowledge, Types of plastics like thermoplastics and the additives & grades to be used etc. Thus he should demonstrate practical skill, routine and repetitive in hand lay out, spray lay out etc. process.</p> <p>Plastics Product Manufacturing</p>	

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	<p>problem solving techniques and detailing out the problems</p> <ul style="list-style-type: none"> • Discuss possible solution with the operator for problem solving. <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> • Plan and organize the work order and jobs received from the internal customers/ operator. • Organize all process/ equipment manuals so that sorting out <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> • Follow instructions and work on areas of improvement identified • Complete the assigned tasks with minimum supervision • Complete the job defined by the operator within the timelines and quality. <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> • Use common sense and make judgments during day to day basis • Use basic reasoning skills to identify and resolve basic problems • Use intuition to detect any potential problems which could arise during operations. 	<p>Operator is demonstrate and recall the practical skills, doing the routine and repetitive work using appropriate methods & tools with quality which justifies the pegging of Level 4.</p>	
<p>Core skill</p>	<p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> • How to be able to read warnings, instructions and other text material on product labels, components etc • How to enter into the history card details of the fault identified in the plastic product manufactured read equipment manuals and process documents to understand the equipment & processes. • Read instructions especially safety instructions especially symbol while using the equipment in the plant area logs. <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> • Discuss task lists, schedules, and work-loads with co-workers • Question internal customers/ Shop floor 	<p>Plastics Product Manufacturing Operator should be able to read warnings, instructions and other text material on product labels, components etc with minimum required clarity, should have skill of basic arithmetic, like raw material weights additions etc.</p> <p>Plastics Product Manufacturing Operator has the</p>	

QUALIFICATION FILE

	<p>operator appropriately in order to understand the nature of the problem and make a dialog</p> <ul style="list-style-type: none"> • Avoid using jargon, slang or acronyms when communicating with a operator /fellow subordinates etc. Unless it is required. 	<p>ability to communicate written and oral with required clarity, skill to basic arithmetic and understanding of working environment which justifies the pegging of Level 4.</p>	
Responsibility	<p>Plastics Product Manufacturing Operator is majorly responsible for his own job and self learning. He/she Set up basic machine controls and operate hand lay out, spray lay out and process in order to produce good quality product as per approved specifications by operator.</p>	<p>Plastics Product Manufacturing Operator is majorly responsible for his own job and self-learning for assisting in operation of plastics product manufacturing which justifies the pegging of level 4.</p>	

QUALIFICATION FILE

SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

Qualification document has been developed by suggestion and approval of Chemicals and Petrochemicals Core committee constituted by Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India vide order no. 45012/86/2015-PC-IV Dt. 10.03.2016 which consist of senior leaders and experts from Plastics and Allied Industry, Associations under which more than 1 Lakhs Industrial units and has been further substantiated by various study reports, Annual reports etc. A report on the Coordination Committee addresses the issue related with Human Resources/ Skilled manpower requirement of Industry- Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India (page no. 4, Attached as Annexure 9(a)).

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

The Skill gap report states that, there will be 11.6 Lakhs additional manpower is required by 2023-24 is based on the Machinery & Sector growth and Technical Manpower. Refer: Name of the Report **“A report of the coordination committee to address the issues related with human resources/skilled manpower required of the industry”** (page no. 6, Attached as Annexure 9 (a)) (Copy of the Skill Gap Report is enclosed).

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

Mapping of Plastics Product Manufacturing has been done with National Classification of Occupation 2015 to ensure the qualification does not duplicate, the qualification have being checked with qualification pack of other sectors like Rubber, Electronics etc and there is no duplicity observed in terms of contents, module/syllabus covered etc.

The NSDC list of approved and under developed Qualification Packs was checked prior to stating the work to ensure no duplicity.

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?

Qualification documents shall be revised once in a year and CIPET shall collect the feedback from Industries/ Associations, Alumni and necessary revisions/updating in Qualification document will be carried out. Feedback mechanism has been created by CIPET. Based on the Industry feedback in term of employability, course coverage, placement factors etc will be checked and growth indicators will be identified and reviewed by CIPET.

QUALIFICATION FILE

ANNEXURE:

7. Presentation of 2nd core group committee meeting along with Minutes of meeting approved by members

9. Documents supporting need of the qualification:

- a. Report of the Coordination Committee address the issue related with Human Resources/ Skilled manpower requirement of Industry- Department of Chemicals and Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. Of India
- b. A Report on Human Resource and Skill requirement for the Chemicals and Pharmaceutical sector (2022) by NSDC.
- c. Brief report of Chemicals and petrochemicals Industry in India, April 2015, Corporate Catalyst India Pvt Ltd, Page 4
- d. Report on Indian Plastics Industry 2013-17, edition 2, Nov 2014, PlastIndia Foundation.
- e. Indian Plastics Industry – Vision 2012, Leverage Plastic, A report by CRISIL
- f. Potential of Downstream Plastics Industry in North India, 26 June 2012, Knowledge and Strategy paper by Tata Strategic management Group & FICCI.
- g. Potential of plastics industry in Northern India with special focus on Plasticulture and Food Processing- 2014. A report on Plastic Industry by Tata Strategic management Group & FICCI.
- h. Plastic Industry in India a BPF Overview for PlastIndia International Exhibition 2012, New Delhi
- i. Porters Five force Analysis of the Plastics Industry by Santanu Mandal, International Journal of Multidisciplinary Research, Vol 1, Issue 7, November 2011, ISSN 2231 5780

SECTION 4

EVIDENCE OF RECOGNITION AND 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?

Relevant information was collected from Industries and allied sector working in this area. The Plastics industries are recruiting people based on the qualification acquired. Maximum of the industries accept this as qualification for selection/short listing of the individual

(Minutes of Meeting of Core committee is attached).

ANNEXURE:

7. Presentation of 4th core group committee meeting along with Minutes of meeting approved by members.

Vertical Pathway:

The Plastics Product Manufacturing Operator with experience can become Production Supervisor in the Plastics Industries.

Horizontal Pathway:

The individual can migrate within the Plastics Processing related industries.