

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 - Machine Operator Assistant - Plastics Extrusion
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
 - 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.

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- 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: Machine Operator Assistant-Plastics Extrusion

Nature and Purpose of the qualification:

A CIPET trade certificate for Machine Operator Assistant-Plastics Extrusion and The individual at work assists in setting up and operation of the Plastics Extrusion machine to produce good quality products from Plastics materials and operate independently Scrap Grinders, Blenders, High Speed Mixers, Agglomerator etc.

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 is created 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:

Assistant Plastics Extrusion occupation in Plastics product manufacturing process.

Proposed level of the qualification in the NSQF: Level 3

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

480 Notional hours.

Entry requirements / recommendations:

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

Progression from the qualification:

The Machine Operator Assistant- Plastics Extrusion (Level 3) has a clear pathway to Machine Operator- Plastics Extrusion (Level 4).

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

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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: 04.08.2017

Format Structure of the Qualification:

Title and Identification code of component	Mandatory/ Optional	Estimated Size (Notional Hours)	Level
CPC/N 0311: Basics Plastics Raw Materials, Additives, Master batches, pigments & Extrusion Concept	M	60	3
CPC/N 0312 : Health , Safety Practices & House Keeping	M	60	3
CPC/N 0313: Plastics Compounding / Mixing, Scrap Grinding, Agglomerating	M	150	3
CPC/N 0314 : HDPE /PVC Pipe Extruder & Film Extruder Machine Operation	M	90	3
CPC/N 0315 : Reporting & Documentation	M	60	3
CPC/N 0316 : To Carry Out Quality Checks	M	60	3
Total		480	

Qualifications Document - Machine Operator Assistant - Plastics Extrusion attached as Annexure.

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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

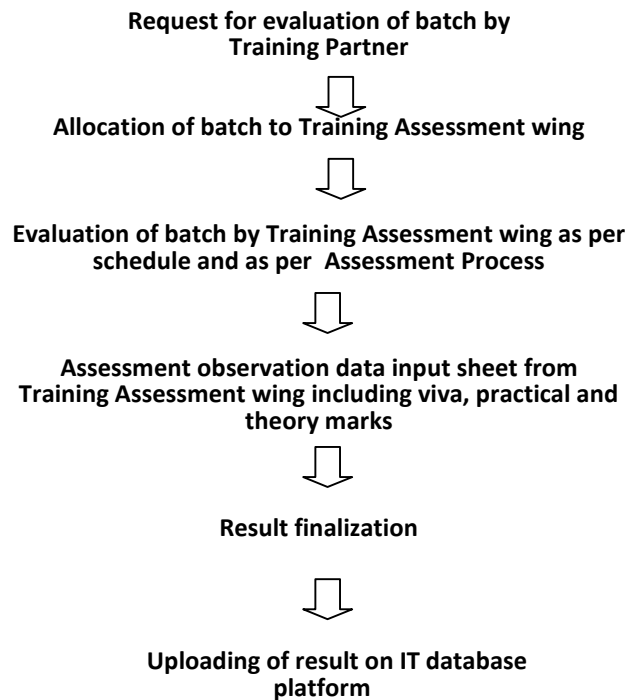
- **Theoretical test suite** – Will include multiple choice questions, audio-video question etc. which will test the trainee on his knowledge of the subject
- **Practical Knowledge suite** – Practical knowledge can be tested through Assessor driven evaluation/test, Situational Judgment Tests etc to test 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

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Assessment Process Flow:



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
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: Machine Operator Assistant – Plastics Extrusion

Assessable outcome		Assessment criteria for the outcome		
LO	Assessable outcome Description	Theory	Practical	Total
1. CPC/N 0311: Basics Plastics Raw Materials, Additives, Master batches, pigments & Extrusion Concept	AO1. Understanding Types of Plastics used in Extrusion and Its Properties	1	4	5
	AO2. Types of Additives , Master batches and Pigments	1	4	5
	AO3. Storing and Handling of Raw Materials and House Keeping	1	4	5
	AO4. Types of Extruders Used in the Extrusion Process and their Parts	1	6	7
	AO5. Storing and Handling of Finished Products and House Keeping.	1	6	7
	AO6. Types of Mixing and Compounding	1	6	7
	AO7. Measurement of Additives, Pigments and Materials.	1	6	7
	AO8. Study and Operation of Scrap Grinding Machines , Blenders & Agglomerator	1	6	7
	AO9. Understanding Safety Equipments and Its Use.	1	4	5
	AO10. Do's and Don't in Area of Operation	1	4	5
	AO11. Safety Precaution Majors before Operations.	1	4	5
	Sub total	11	54	65
2. CPC/N 0312 : Health , Safety	AO1. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise etc	1	2	3

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Practices & House Keeping	AO2. Identify areas in the work places which are potentially hazardous/ unhygienic in nature	1	2	3
	AO3. Conduct regular checks of cleanness at work places	1	2	3
	AO4. Create awareness amongst other by sharing information on the identified risks	1	2	3
	AO5. Support the Safety team and the supervisor in creating the risk mitigation plan	1	2	3
	AO6. Follow the instructions given on the equipment manual describing the operating process of the equipment	2	2	4
	AO7. Follow the Safety, Health and Environment related practices developed by the organization	2	4	6
	AO8. Ensure relevant safety boards/ signs are placed on the shop floor	1	4	5
	AO9. Operate the machine using the recommended Personal Protective Equipment (PPE) and ensure team members also use the related PPEs at the workplace	1	4	5
	AO10. 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	4	5
	AO11. Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques	1	4	5
	AO12. Maintain high standards of personal hygiene at the work place	1	4	5
	AO13. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.	1	2	3
	AO14. 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	2	3
	AO15. Immediate First Aid action to be taken in case of any fatal accident due to Fire, Electricity, Gas, Chemicals etc	1	2	3
	AO16. Immediate Action to be taken in case Fire, Gas, Chemicals etc	1	2	3
		Sub total	18	44
3. CPC/N 0313: Plastics Compounding / Mixing, Scrap Grinding,	AO1. Understanding Types of Chemicals, Additives and Colorants.	1	4	5
	AO2. Formulation laid down for different Products	1	4	5
	AO3. Weighing and Batch Size	1	4	5
	AO4. Types of Blenders , Mixers and their Parts	1	4	5
	AO5. Preparation Batches as per the formulations.	1	4	5

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Agglomerating	AO6. Loading and unloading of Batches.	1	4	5
	AO7. Temperature, Pressure and Speed involved in Blenders and Mixers.	2	4	6
	AO8. Importance of each and every Parameters.	2	6	8
	AO9. Precaution to be taken care during the batch preparation.	2	6	8
	AO10. Storing of batches after preparation.	2	6	8
	AO11. Types of Scrap Grinders and Agglomerator and their parts	2	6	8
	AO12. Operation & Trouble Shooting	1	6	7
	AO13. Storing, House Keeping, Safety while operation	1	4	5
	AO14. Understanding Safety Equipments and Its Use.	1	4	5
	AO15. Do's and Don't in Area of Operation	1	4	5
	AO16. Safety Precaution Majors before Operations.	1	4	5
		Sub total	21	74
4. CPC/N 0314 : HDPE /PVC Pipe Extruder & Film Extruder Machine Operation	AO1. Types of HDPE / PVC Extruders & their Parts.	1	2	3
	AO2. Types of Film Extruders & their Parts	1	4	5
	AO3. Starting up & Shutting Down Process.	1	4	5
	AO4. Threading (Initial Take up) of Pipes & Films	1	4	5
	AO5. Safety Precaution taken during assembling and disassembling.	2	4	6
	AO6. Material Loading and Handling.	2	4	6
	AO7. Finished Products Sagggregation & Stacking	2	4	6
	AO8. Post Production Operation	2	4	6
	AO9. Understanding Safety Equipments and Its Use.	1	4	5
	AO10. Do's and Don't in Area of Operation	1	4	5
	AO11. Safety Precaution Majors before Operations.	1	2	3
	Sub total	15	40	55
5. CPC/N 0315 : Reporting & Documentation	AO1. Report data/problems/incidents as per the laid down procedure in the prescribed format and registers.	2	4	6
	AO2. Report to the appropriate authority as laid down by the company procedure.	2	4	6
	AO3. Identify documentation to be completed relating to the job profile.	2	6	8
	AO4. Record details accurately in an appropriate format.	4	6	10
	AO5. Complete all documentation within stipulated time according to company procedure.	4	6	10
	AO6. Make sure documents are available to all appropriate authorities to inspect.	2	6	8
	AO7. Respond to requests for information in an appropriate manner whilst following organizational procedures.	2	6	8

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	AO8. Inform the appropriate authority of requests for information received.	2	6	8
	Sub total	20	44	64
6. CPC/N 0316 : To Carry Out Quality Checks	AO1. Ensure that total range of checks as per the prescribed national and International standards on regular intervals throughout the shifts.	1	2	3
	AO2. Use appropriate measuring instruments, equipment, tools, accessories etc, as prescribed / required	1	2	3
	AO3. Identify non-conformities to quality assurance standards.	1	2	3
	AO4. Identify potential causes of non-conformities to quality assurance standards	1	4	5
	AO5. Identify impact on final product due to non-conformance to prescribed Standards.	1	4	5
	AO6. Evaluating the need for action to ensure that problems do not reoccur.	1	4	5
	AO7. Suggest corrective action to address problem.	1	4	5
	AO8. Review effectiveness of corrective action.	1	4	5
	AO9. Interpret the results of the quality check correctly	1	4	5
	AO10. Take up results of the findings with QC in charge/appropriate authority.	1	4	5
	AO11. Take up the results of the findings within stipulated time	1	2	3
	AO12. Record of results of action taken.	1	2	3
	AO13. Record adjustments not covered by established procedures for future reference.	1	2	3
	AO14. Review effectiveness of action taken.	1	2	3
	AO15. Follow reporting procedures where the cause of defect cannot be identified.	1	2	3
	Sub total	15	44	59
	Total	100	300	400

Means of assessment 1:

The assessment comprise of -

- Theory Assessment
- Viva voce
- Practical assessment

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.

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SECTION 2

EVIDENCE OF LEVEL

Level of qualification: 3

Title /Name of Qualification/Component: Machine Operator Assistant - Plastics Extrusion Level: 3			
NSQF Domain	Outcomes of the Qualification/Component	How the job role relates to the NSQF Level descriptors	NSQF Level
Process	<p>Machine Operator Assistant - Plastics Extrusion is expected to ensure housekeeping and safety in the moulding area and select the correct mould, etc he/she has to</p> <ul style="list-style-type: none"> • To interact with the operator in order to understand the production schedule • To help in planning the day's production activities based on the operator's instructions • 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 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 	<p>Machine Operator Assistant - Plastics Extrusion 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 die from Die shop or Die Storage Area.</p> <p>He should understand the raw material like plastics granules, fillers, bonding additives etc. required for executing the activity.</p>	3

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	<ul style="list-style-type: none"> • Understand the die required for executing the required operation and ensure that the same is available for operation. • If die is not available collect the mould from Die shop or Die Storage Area • Add the raw material in the machine using material loader or by manual feeding. • Ensure dies are clean if not clean with soft cotton cloth. • Ensure cleaning of the other auxiliaries tools, (if any) before the initiation of the moulding and trimming process • Ensure cleaning of the area around the apparatus for any oil, grease, combustible substances etc. so as to prevent any accident • Ensure availability of the coolant and working of valves to circulate the coolant to cool and solidify plastic • Understand the raw material like plastics granules, fillers, bonding additives etc. required for executing the activity • Refer the queries to supervisor if they cannot be resolved by the operator • 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"> • Different types of Plastics, Additives, Master batches & pigments used in extrusion process • Storing and Handling of Raw Materials and House Keeping • Machine Cleanliness and safety 	<p>Machine Operator Assistant - Plastics Extrusion should understand and know basic facts a, process, principle of plastics extrusion techniques like</p>	<p>3</p>

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	<p>requirements for commencing Compounding Mixing & Blender.</p> <ul style="list-style-type: none"> • General Principle, process knowledge & working procedure of extrusion machine. • Identification of various defects in products produced in extrusion machine. 	<p>HDPE pipe extrusion, Blown Film etc.</p>	
Professional skill	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> • General principles of moulding procedure and process knowledge mould loading and unloading procedure. • 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 problem solving techniques and detailing out the problems • 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 	<p>Machine Operator Assistant - Plastics Extrusion should recall general principles of extrusion types 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 extrusion application/ process.</p>	3

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	<p>manuals so that sorting out</p> <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. • The user/individual on the job needs to know and understand how to: • 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>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 and processes. • Read instructions especially safety instructions especially symbols 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 operator appropriately in order to 	<p>Machine Operator Assistant - Plastics Extrusion should be able to read warnings, instructions and other text material on product labels, etc with minimum required clarity, should have skill of basic arithmetic, like raw material weights additions etc.</p>	<p>3</p>

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	<p>understand the nature of the problem and make a diagnosis</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. 		
Responsibility	<p>Plastics Extrusion Operator Assistant is responsible for his own job and self learning. He/she Set up basic machine controls and operate Plastics extrusion Machine, Operating of high speed mixer & blenders, Collect of Raw Materials, changing the process parameters in order to produce good quality products as per approved specifications by operator.</p>	<p>Plastics Extrusion Operator Assistant is responsible for assist machine operator to operate HDPE/PVC Pipe Extruder or Blown Film Plants to Produce Pipes or Films, Operate Scrap Grinders, Agglomerator, High Speed Mixers & Blenders.</p>	3

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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 Machine Operator Assistant – Plastics Extrusion has been done with National Classification of Occupation 2004 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.

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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.

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

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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)***.

The skills acquired at level 3 for a particular duration makes it easy for the Individual to progress to the next level.

ANNEXURE:

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

Vertical Pathway:

The Occupational Map has been created & attached.

The Machine Operator Assistant-Plastics Extrusion (Level 3) has a vertical pathway to Machine Operator-Plastics Extrusion (Level 4).

Horizontal Pathway:

The individual can migrate within the Plastics Processing related industries.

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Occupation Map – Vertical Pathway

