





# QUALIFICATIONS PACK- OCCUPATIONAL STANDARDS FOR PLASTICS INDUSTRY

# What are Occupational Standards (OS)?

- ➤ OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- performance
  standards that
  individuals must
  achieve when
  carrying out
  functions in the
  workplace, together
  with specifications
  of the underpinning
  knowledge and
  understanding

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# Introduction

# Qualifications Pack- Machine Operator Assistant – Plastics Processing

**SECTOR: RUBBER** 

**SUB SECTOR: MANUFACTURING/ PLASTICS PROCESSING** 

**OCCUPATION: PLASTICS PROCESSING** 

REFERENCE ID: RSC/Q4801 (CPC/Q0103)

**ALIGNED TO:** 

#### **Brief Job Description:**

The Individual has to assist the operator and also shall handle plastic granules (raw materials), set up and operate the plastics processing machines, finishes the product & store in desired place.

#### **Personal Attributes:**

The assistant machine operator should have basic communication, numerical and computational abilities. He should be attentive & vigilant towards his, duties. He should coordinate with his co members & seniors to deliver desired output. He should possess good physical fitness.







Q	ualifications Pack Code	RSC/Q4801 (CPC/Q0103)		
Jo	bb Role	Machine Operator Assistant - Plastics Processing		
C	redits (NSQF)	24	Version number	1.0
S	ector	Rubber	Drafted on	18/05/2016
Sı	ub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
0	ccupation	Plastics Processing	Next review date	31/12/2021
N	SQC Clearance on	21/07/2016	-	

Job Role	Machine Operator Assistant- Plastics Processing		
Role Description	Responsible for operation of different plastic processing machineries & its trouble shooting.		
NSQF level Minimum Educational	3		
Qualifications*  Maximum Educational  Qualifications*	VIII <sup>th</sup> Standard		
Training (Suggested but not mandatory)	No previous training required		
Minimum Job Entry Age	18		
Experience	No previous experience required		
Applicable National Occupational Standards (NOS)	<ol> <li>Compulsory:         <ol> <li>RSC/N4801 (CPC/N0109): Familiarization with basic concepts, job requirements &amp; basic related process.</li> <li>RSC/N4802 (CPC/N0110): Basic Knowledge about different plastic material</li> <li>RSC/N4803 (CPC/N0111): Familiarized with various Plastics processing techniques &amp; to assist the Operator in Injection moulding machine, Extrusion, Blow Moulding etc.</li> </ol> </li> <li>RSC/N4101 (CPC/N0411): Maintain basic health and safety practices at the workplace, 5S.</li> </ol>		
Performance Criteria	As described in the relevant OS units		







Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Occupational Standards (OS)	OS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-Sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a OS unit, which can be denoted with an 'N'







Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.

Keywords /Terms	Description
OS	Occupational Standard(s)
NVEQF	National Vocational Education Qualifications Framework
NVQF	National Vocational Qualifications Framework
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack











# **Overview**

This unit is about understanding the job requirement and the activities & equipment associated with the process to complete the job requirement







Unit Code	RSC/N4801 (CPC/N0109)	
Unit Title	Familiarization with basic concepts, job requirements & basic related	
(Task)	process	
Description	This OS unit is about understanding the job requirement, what processes /machine need to be executed, and what is the required output considering the standards specified.	
Scope	The Semi Skilled Operator - will be responsible for	
	Understanding of the basic principle involved in the processing	
	Understanding the operation of the machine	
	Understanding the process requirement	
	Cleaning the machine and Mould / Die	
Performance Criteria (PC) w.r.t	·	
Element	Performance Criteria	
Understand the work order and the process	To be competent, the user/individual on the job must be able to:  PC1. Discuss the work order (work output) required from the process and	
requirements	with the supervisor	
	PC2. Refer all components / process related documents to understand	
	dimensions and properties of the required work output	
	PC3. Ensure 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.	
	PC4. Follow does and don'ts of the manufacturing process as defined in	
	SOPs/ Work Instructions or defined by supervisors	
Arrange for the	PC5. Follow the conversion procedure and process to be adopted for	
material to be	completing the work order from the supervisor by referring the	
processed and	Work Instruction document/ SOP manual	
apparatus required	PC6. Set the various parameters like temperature of the heaters,	
for the same	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	
	PC7. Identify the raw material like plastics granules, bonding additives	
	etc. required for executing the activity	
	PC8. Ensure the required material is available before starting the process	
	PC9. Study the type of Mould /Die required for executing the required	
	conversion operation and ensure that the same is available for	
	moulding operations	
	PC10. Ensure the availability of spare parts for continuous operation of	
	machine	









	·
Clean the apparatus	PC11. Ensure that mould / Die are cleaned properly & no foreign material
and the components	is entrapped in parts of mould/die.
before executing the	PC12. Ensure cleaning of the other moulding machine tools, auxiliaries(if
process	any)
	PC13. Ensure cleaning of the area around the machine for any oil, grease,
	water etc
Escalations of queries	PC14. Consult with superiors in case of any doubt/clarification
on the given job	PC15. Self-confidence after resolving the queries to complete the task.
	PC16. Report completion of work to superiors
Interaction with other	PC17. Good interpersonal relations with superiors & fellow operators.
concern department	PC18. Disciplined behavior in work place
	PC19. Good coordination with other department person for getting their
	support for work.
Knowledge and Understanding	(к)
A. Organizational	The user/individual on the job needs to know and understand:
Context (Knowledge of the	KA1. Company's policies on personnel management
company / organization and	KA2. Company's code of conduct & policy
its processes)	KA3. The importance of individual's role in the work flow
	KA4. Organization culture
	KA5. Company's reporting structure
	KA6. The functional process like store management, procurement,
	quality management
B. Technical	The user/individual on the job needs to know and understand:
Knowledge	VD1 Different times of plastic processing techniques
	KB1. Different types of plastic processing techniques
	KB2. Different parameters pertinent to process like heater temperature,
	hydraulic pressure/ air pressure/ vacuum pressure, rotating speed
	of the screw, operating current and voltage, injection time, refilling time, blowing time etc. and the impact of these parameters on the
	process output
	KB3. Various types of plastics like thermoplastics/ thermosetting plastics
	and the Additives to be used
	KB4. Properties of various plastic materials
	KB5. Processing behavior of various plastic raw materials
	KB6. Safe storage of raw materials
	KB7. Different types of moulds & dies
	KB8. Different types of measuring instruments like vernier calipers,
	micrometres etc.
	KB9. Geometry and dimension measurement of the product
	KB10. Different types of tools to trim the plastic product
	KB11. Hazards and safety aspects involved in different processing techniques
Skills (S) [Optional]	
A. Core Skills/ Generic	Writing Skills









Skills	SA1. To prepare document related to processing parameter, other	
	technical records like machine log sheets, job card etc.	
	SA2. To prepare draft drawings for the final output product	
	SA3. To write information documents to internal departments/internal	
	teams	
	Reading Skills	
	SA4. To read & interpret machine parameters	
	SA5. To read and interpret engineering drawing and sketches	
	SA6. To read equipment manuals and process documents	
	SA7. To read instructions like safety instructions , symbols while using	
	the equipment in the plant area	
	Oral Communication (Listening and Speaking skills)	
	The user/individual on the job needs to know and understand how to:	
	SA8. Communicate orally any instructions related to work with superiors	
	& co workers with clarity	
	SA9. Listen actively	
	SA10. Follow company protocol for communication	
B. Professional Skills	Decision Making & Problem Solving	
	The user/individual on the job needs to know and understand how to:	
	SB1. Make proper decisions per hing to the work	
	SB2. Identify of problem	
	SB3. Finding the resource to resolve the problem	
	SB4. Consult superiors in case of any assistance	
	Plan and Organize  The user/individual on the job needs to know and understand:	
	SB5. To plan, fix up priorities for work operations as per job	
	requirements	
	SB6. To organize and analyze information relevant to work	
	SB7. The basic concepts of shop-floor work productivity including	
	material management waste reduction etc.	
	Initiative	
	The user/individual on the job needs to know and understand how to:	
	SB8. Undertake and express new ideas and initiatives to others	
	SB9. Modify work plan to overcome unforeseen difficulties or	
	developments that occur as work progresses	
	SB10. Participate in improvement procedures including process, quality	
	etc	
	Analytical / Critical Thinking	
	The user/individual on the job needs to know and understand how:	
	SB11. To apply, analyze, and evaluate the information gathered from	
	observation, experience, reasoning, or communication, as a guide	
	to thought and action	
	Team Work	
	The user/individual on the job needs to know and understand how:	
	The asery maintagar on the job needs to know and understand now.	

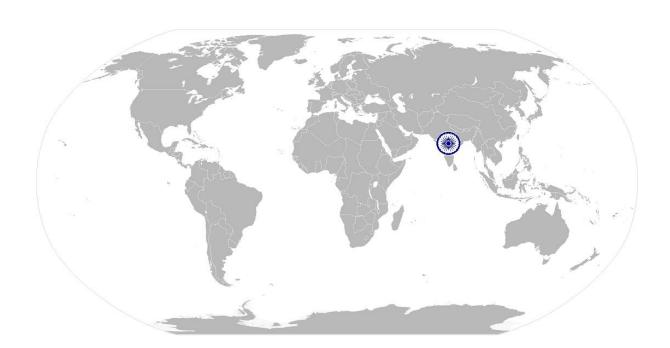








SB12.	To exhibit good team work with all
SB13.	To consult superiors or fellow workers in case of any assistance
SB14.	To maintains good inter personal relations











# **NOS Version Control**

NOS Code	RSC/N4801 (CPC/N 0109)		
Credits (NSQF)	7.5	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	Plastics Processing	Next review date	31/12/2021











# National Occupational Standards

# **Overview**

This unit is about understanding of different types of plastic material, their properties & application







Unit Code	RSC/N4802 (CPC /N 0110)		
Unit Title (Task)	Basic Knowledge about different plastic material		
Description Description	This OS unit is about understanding the different types of plastics materials being used		
20011741011	in the industry, their basic knowhow, properties, etc.		
Scope	The Semi Skilled Operator will be responsible for		
55065	Understanding the various types of Plastics materials		
	Basic knowhow of the processing behavior of Plastics materials		
	Maintaining the raw material for the process		
	Cleaning the material spillage around machine		
Performance Criteria (			
Element	Performance Criteria		
Understanding the	To be competent, the user/individual on the job must be able to:		
various types of	PC1. Discuss about the type of raw material being used in the industry & for work		
Plastics materials	Order required for the process and with the supervisor		
r lastics inaterials	PC2. Refer all material related documents to understand properties of the required		
	work output and able to identify the material		
	PC3. Follow the process requirement 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		
Basic knowhow of	PC4. Study the melting temperature, processing temperature etc. for plastic raw		
the processing	material		
behavior of Plastics	PC5. Identify the processing characteristics of the plastics material being used for		
materials	conversion procedure and process to be adopted for completing the work		
	order from the supervisor by referring the Work Instruction document / SOP		
	manual		
Maintaining the raw	PC6. Ensure that the required material is available before starting the process		
material for the	PC7. Ensure that the plastics material is blended with requisite additives		
process			
Cleaning the material	PC8. Ensure that machine / mould / Die are cleaned properly & no foreign material		
spillage around	is entrapped in parts of machine / mould / die.		
machine	PC9. Keep that clean of the materials spilled around the machine		
	PC10. Ensure cleaning of the area around the machine for any oil, grease, water etc.		
Knowledge and Unders	standing (K)		
A. Organizational	The user/individual on the job needs to know and understand:		
Context	KA1. The company's policies on personnel management		
(Knowledge of	KA2. Company's code of conduct & policy		
the company /	KA3. The importance of individual's role in the work flow		
organization and	KA4. The organization culture		
its processes)	KA5. The company's reporting structure		
	KA6. The functional process like store management, procurement, quality		
	management		
B. Technical	The user/individual on the job needs to know and understand:		
Knowledge	KB1. The different of plastic materials		
	KB2. Various types of plastics like thermoplastics / thermosetting plastics and the		









	additives to be used		
	KB3. Properties / characteristics of various plastic materials		
	KB4. Processing behavior of various plastic raw materials		
	KB5. Safe storage of raw materials		
	KB6. Hazards and safety aspects involved with different processing techniques		
Skills (S) [Optional]	The state of the s		
A. Core Skills/	Writing Skills		
Generic Skills	SA1. Prepare document related to raw material used, stock position, other		
	technical records like machine log sheets, job card etc.		
	SA2. Write information documents to internal departments/ internal teams		
	Reading Skills		
	SA3. To read & interpret material data sheet		
	SA4. To read & interpret machine parameters		
	SA5. To read instructions like safety instructions, symbols being used in the plant		
	area		
	Oral Communication (Listening and Speaking skills)		
	The user/individual on the job needs to know and understand how to:		
	SA6. Communicate orally any instructions related to work with superiors & co-		
	workers with clarity		
	SA7. Listen carefully & follow company protocol for communication		
B. Professional	Decision Making & Problem Solving		
Skills	The user / individual on the job needs to know and understand how to:		
	SB1. Identify the problem		
	SB2. Make proper decisions pertaining to the work		
	SB3. Consult superiors in case of any assistance		
	Plan and Organize		
	The user/individual on the job needs to know and understand:		
	SB4. Fix up priorities for work operations as per job requirements		
	SB5. Organize and analyze information relevant to work		
	SB6. The basic concepts of shop-floor work productivity including material		
	management, waste reduction etc.		
	Initiative		
	The user/individual on the job needs to know and understand how to:		
	SB7. Undertake and express new ideas and initiatives to others		
	SB8. Modify work plan to overcome unforeseen difficulties or developments that		
	occur as work progresses		
	SB9. Participate in improvement of procedures including process, quality etc.		
	Analytical / Critical Thinking  The user /individual on the ich moods to know and understand how to		
	The user/individual on the job needs to know and understand how to:		
	SB10. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action		
	Team Work		
	The user/individual on the job needs to know and understand how to:		
	SB11. Exhibit good team work with all		
	SDII. EXHIBIT ROOM TEAHI MOLK MITH AH		

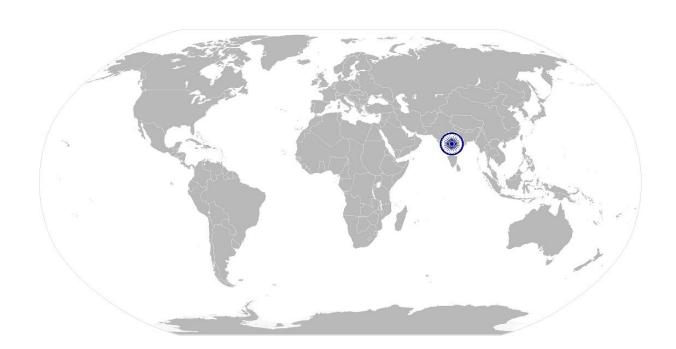








SB12.	Maintain good inter personal relations
SB13.	Consult superiors or fellow workers in case of any assistance











# **NOS Version Control**

NOS Code	RSC/N4802 (CPC/N 011	RSC/N4802 (CPC/N 0110)	
Credits (NSQF)	3	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	Plastics Processing	Next review date	31/12/2021









# National Occupational



# **Overview**

This unit is about to understand the various Plastics processing techniques & Operate the Injection moulding machine, Extrusion & Blow Moulding machines









Unit Code	RSC/N4803 (CPC /N0111)	
Unit Title	Familiarized with various Plastics processing techniques & to assist the Operator in	
(Task)	Injection moulding machine, Extrusion, Blow Moulding etc.,	
Description	This OS unit is about operating the Injection Moulding Machine & its trouble shooting	
Scope	The Semi Skilled Operator will be responsible for	
	Assist in Pre-moulding operation & Moulding Operation	
	Assist in extrusion Pre-extrusion operation & Extruder operation	
	Assist in Blow molding process, mould / materials used.	
	Material Handling	
Performance Criteria (I		
Element	Performance Criteria	
Pre moulding	To be competent, the user/individual on the job must be able to :	
operation	PC1. Assist in Planning work schedule in concurrence with Superior	
	PC2. Follow the data sheet, manual, work instructions	
	PC3. Check the power supply, hydraulic oil level, water connections	
	PC4. Ensure availability of the tools ,materials & ancillary equipments for the work	
	PC5. Setup the equipment & machineries as per the job requirement	
	PC6. Follow Planning for Minimum wastage & its safe disposal	
	PC7. Work in conformance to legal requirements, organizational policies and	
	procedures	
Moulding Operation	PC8. Ensure the mould is ready & having no problem in dry run	
	PC9. Check material is available for production. If required arrange for pre drying	
	PC10. Check the availability & readiness of ancillary equipments like chiller, mould	
	PC11. Load the material and pigment (if required) in the hopper	
	PC12. Observe to Set the parameters of the machine i.e. temperature, pressure,	
	speed etc	
	PC13. Check the temperature on the barrel with respect to set temperature	
	PC14. Conduct trial run to get sample piece once machine is set with the help of	
	operator	
	PC15. Visual check of final product in consultation with operator	
	PC16. Carry out post molding operation during the cycle time run such as. trimming,	
	apply protective tapes, putting labels on each product for identification	
Blow Moulding	PC17. Learn the process, their types, operations involved	
Operation	PC18. Assist the operator in the work requirements for the process and with the	
	supervisor	
	PC19. Refer all components / process related documents to understand dimensions	
	and properties of the required work output	
	PC20. Follow 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	
Pre extrusion	PC21. Plan work schedule in concurrence with Operator	
operation	PC22. Assist the operator to obtain and check the data on the job card and carry out	
•	functions in line with the responsibilities of job role	
	PC23. Ensure availability of data sheet, manual, work instructions	
	PC24. Check for power supply, oil level in gear box, water connections	
	PC25. Setup the equipment & machineries as per the job requirement	
	PC26. Plan for Minimum rejection & its safe reuse/disposal	
	PC27. Safety aspects of machine operation	
	PC28. Work in conformance to legal requirements, organizational policies and	
	procedures	
Extrusion	PC29. Check material is available for production. Compounding / Color blending	
	PC30. Check the availibity & readiness of ancillary equipments like air compressor,	
	hopper loader, dehumidifier, Cooling towers etc	
	PC31. Load the material in the hopper	
	PC32. Set the parameters of the machine i.e. temperatures, speeds etc.	
	PC33. Check the temperature on the barrel respect to set temperature	
	PC34. Conduct trial run to get extruded sample once machine is set	
	PC35. Adjust parameters unless getting final product	
	PC36. Visual check of final product	
	PC37. Corona treatment & printing, if required	
	PC38. Store the final product in specified area	
	PC39. Clean the machine & equipments at regular interval	
	PC40. Work in compliance with specified health and safety standards	
Knowledge and Unders		
B. Organizational		
Context (Knowledge	KA1. The company's policies on personnel management	
of the company /	KA2. Company's code of conduct & policy	
organization and its	KA3. The importance of individual's role in the work flow	
processes)	KA4. The organization culture	
	KA5. Company's reporting structure	
	KA6. The functional process like store management, procurement, quality	
	management	
B. Technical	The user/individual on the job needs to know and understand:	
Knowledge	KB1. Different types of plastic material	
	KB2. Properties of plastic material	
	KB3. About Semi-Automatic & Fully-Automatic operation of machines	
	KB4. Machine start up procedure	
	KB5. Principle of Injection Moulding	
	KB6. Parameter setting of injection moulding Machine–Temperature, Pressure,	









	Time		
	KB7. Clamping system – Hydraulic & Toggle		
	KB8. Mould loading & unloading procedure		
	KB9. Calculation of tonnage, importance of mould dimensions, mould day-light		
	KB10. Injection Unit, shot weight setting, Calculation of plasticizing capacity of		
	Machine , types of nozzles, ring plunger set		
	KB11. Monitoring of parameters for production of quality components		
	KB12. Post moulding operation like finishing, deflashing		
	KB13. Qquality Control & testing of plastic product		
	KB14. Mminimisation of rejection & reuse of feed system		
	KB15. Shut down procedure		
Skills (S) [Optional]			
A. Core Skills/	Writing Skills		
Generic Skills	SA1. To Prepare document related to processing parameter, other technical		
	records like machine log sheets, job card etc.		
	SA2. To write information documents to internal departments/ internal teams		
	SA3. To compilation of production records		
	Reading Skills		
	SA4. To read & interpret machine parameters		
	SA5. To read equipment manuals and prodes documents		
	SA6. To read instructions like safety instructions, symbols while using the		
	equipment in the plant area		
	Oral Communication (Listening and Speaking skills)		
	The user/individual on the job needs to know and understand how to:		
	SA7. Communicate orally any instructions related to work with superiors & co		
	workers with clarity		
	SA8. Listen actively		
	SA9. Follow company protocol for communication		
B. Professional Skills	Decision Making & Problem Solving		
	The user/individual on the job needs to know and understand how to:		
	SB1. Make proper decisions pertaining to the work		
	SB2. Identify the problem		
	SB3. Find the resource to resolve the problem		
	SB4. Consult superiors in case of any assistance		
	Plan and Organize		
	The user/individual on the job needs to know and understand:		
	SB5. To Plan, fix up priorities for work operations as per job requirements		
	SB6. To organize and analyze information relevant to work		
	SB7. The basic concepts of shop-floor work productivity including material		
	management waste reduction etc.		
	Initiative		
	The user/individual on the job needs to know and understand how to:		









SB8.	Undertake and express new ideas and initiatives to others
SB9.	Modify work plan to overcome unforeseen difficulties or developments that
	occur as work progresses

SB10. Participate in improvement procedures including process, quality etc

#### **Analytical / Critical Thinking**

The user/individual on the job needs to know and understand how to:

SB11. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

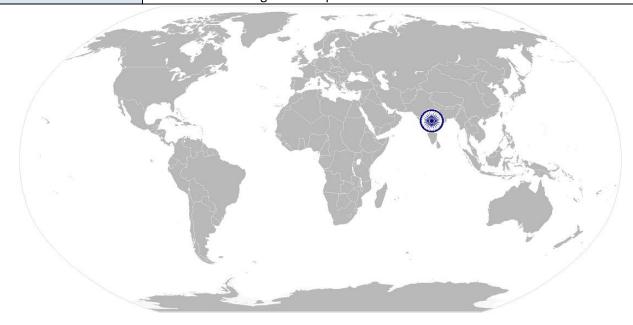
#### **Team Work**

The user/individual on the job needs to know and understand how to:

SB12. Exhibit good team work with all

SB13. Consult superiors or fellow workers in case of any assistance

SB14. Maintains good inter personal relations











# **NOS Version Control**

NOS Code	RSC/N4803 (CPC/N0111)		
Credits (NSQF)	10	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	Plastics Processing	Next review date	31/12/2021











# National Occupational



# **Overview**

This unit Covers health, safety and security at the work place. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.









Unit Code	RSC/N4101 (CPC/N0411)		
Unit Title			
(Task)	Maintain basic health and safety practices at the workplace, 5S		
Description	This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment. It includes understanding of risks & hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies etc. It covers knowledge of fire safety, common first aid applications and safe practice. This OS is about ensuring all 5S activities both at the shop floor and the office area to facilitate increase in work productivity.		
Scope	The role holder will be responsible for		
	Health and safety procedure.		
	Fire safety procedure.		
	Emergencies, rescue and first aid procedures.		
	<ul> <li>Ensure sorting, stream lining, storage and documentation, cleaning,</li> <li>standardization and sustenance across the plant premises of the</li> </ul>		
	organization.		
Performance Criteria (I			
Element	Performance Criteria		
Health and safety	The individual on the job should ensure to:		
	PC1. Wear protective clothing/equipment for specific tasks and work conditions PC2. Carry out safe working practices while dealing with hazards to ensure the safety of Self and others. PC3. Ensure good housekeeping practices at all times		
Fire safety	The individual on the job should be able to:		
	PC4. Use the various appropriate fire extinguishers on different types of fires correctly PC5. Demonstrate rescue techniques applied during fire hazard, demonstrate good housekeeping in order to prevent fire hazards, demonstrate the correct use of a fire extinguisher.		
Emergencies, rescue	PC6. Identify activities which can cause potential injury through sharp objects, burns,		
and first aid procedures.	fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise,		
procedures.	and Identify areas in the plant which are potentially hazardous / unhygienic in		
	nature. Conduct regular checks with support of the maintenance team on		
	machine health to identify potential hazards due to wear and tear of machine.		
	PC7. Inform the concerned authorities on the potential risks identified in the processes, workplace area/ layout, materials used etc, Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations.		
	PC8. Create awareness amongst others by sharing information on the identified		
	risks.		









Ensure sorting, stream lining, storage and documentation, cleaning, standardization and sustenance across the plant premises of the organization.	PC9. 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.  PC10. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions  PC11. Follow the technique of waste disposal and waste storage in the proper bins as per SOP  PC12. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places  PC13. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions  PC14. Ensure that areas of material storage are not overflowing  PC15. Ensure 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  PC16. Return of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area  PC17. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards  PC18. Follow the proper labelling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists  PC19. Ensure to check the items in the respective areas have been identified as broken or damaged  PC20. Follow the given instructions and check for labelling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.  PC21. To make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions
Knowledge and Unders	standing (K)
B. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand:  KA1. The relevant standards, procedures and policies related to Health, Safety and Environment followed in the company  KA2. The emergency handling procedures & hierarchy for escalation
B. Technical Knowledge	The user/individual on the job needs to know and understand:  KB1. The basic knowledge of Safety procedures (fire fighting, first aid) within the organization  KB2. The basic knowledge of various types of PPEs and their usage









N3C/N4101	(CPC/NO411) Maintain basic health & Sajety Practices at the Workplace, 55
	KB3. The basic knowledge of risks/hazards associated with each occupation in the organization
	KB4. The knowledge of personal hygiene and how an individual contribute towards creating a highly safe and clean working environment the individual on the job needs to know and understand.
	KB5. The meaning of "hazards" and "risks"
	KB6 The health and safety hazards commonly present in the work environment and related precautions
	KB7. The possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible
	KB8. The Possible causes of risk and accident (due to oil leakage)
	KB9. Methods of accident prevention
	KB9. Safe working practices when working with tools and machines
	KB10. Safe working practices while working at various hazardous sites
	KB11. To know the where to find all the general health and safety equipment in the
	workplace
	KB12. Various dangers associated with the use of electrical equipment
	KB13. Preventative and remedial actions to be taken in the case of exposure to toxic
	materials
	KB14. The Importance of using protective othing/equipment while working
	KB15. Precautionary activities to prevent the fire accident
	KB16. Various causes of fire
	KB17. To know the techniques of using the different fire extinguishers
	KB18. To know the different methods of extinguishing fire
	KB19. To know the different materials used for extinguishing fire
	KB20. Rescue techniques applied during a fire hazard
	KB21. Various types of safety signs and what they mean
	KB22. To know the appropriate basic first aid treatment relevant to the condition
	e.g. shock, electrical shock, bleeding, breaks to bones, minor burns,
	resuscitation, poisoning, eye injuries
	KB23. To know the content of written accident report
	KB24. Potential injuries and ill health associated with incorrect manual handing
	KB25. Safe lifting and carrying practices
	KB26. Personal safety, health and dignity issues relating to the movement of a person by others
	KB27. Potential impact to a person who is moved incorrectly
	KB28. To have basic knowledge of 5S procedures
	KB29. To know the various types 5s practices followed in various areas
	KB30. Understand to the 5S checklists provided in the department/ team
	KB31. To have skills to identify useful & non useful items
	KB32. To have knowledge of labels , signs & colours used as indicators
	KB33. To have knowledge on how to sort and store various types of tools, equipment, material etc.
	KB34. To know , how to identify various types of waste products

KB35. Understand to the impact of waste/ dirt/ dust/unwanted substances on the









		process/ environment/ machinery/ human body.		
		KB36. To have knowledge of best ways of cleaning & waste disposal		
Skills (	S) [Optional]			
Elem	ent	Skills		
B. Co	re Skills/	Writing Skills		
Ge	eneric Skills	The user/ individual on the job needs to know and understand how to:  SA1. Understand basic level notes and observations.		
		Reading Skills		
		The user/individual on the job needs to know and understand about the:  SA2. safety instructions put up across the plant premises  SA3. Safety precautions mentioned in equipment manuals and panels and understand the potential risks associated  Oral Communication (Listening and Speaking skills)		
		The user/individual on the job needs to know and understand how to:  SA4. Effectively communicate information to team members  SA5. Inform employees in the plant and concerned functions about events, Incidents & potential risks observed related to Safety, Health and Environment.  SA6. Question operator/ supervisor in order to understand the safety related issues  SA7. Attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs		
C. Pro	ofessional Skills	Plan and Organize		
		The user/individual on the job needs to know and understand how to:  SB1. Process the work order and jobs received from the internal customers.  SB2. Design documents received from internal customers  SB3. Understand & organize all process/ equipment manuals so that sorting out information is fast.  Judgment and Critical Thinking		
		The user/individual on the job needs to know and understand how to:  SB4. Use common sense and make judgments during day to day basis  SB5. Use intuition to detect any potential problems which could arise during operations		
		Desire to learn and take initiatives		
		The user/individual on the job needs to know and understand how to:  SB6. Follow instructions and work on areas of improvement identified  SB7. Complete the assigned tasks with minimum supervision  SB8. Complete the job defined by the supervisor within the timelines and quality norms		









# **NOS Version Control**

NOS Code	RSC/N4101 (CPC/N0411)			
Credits (NSQF)	3.5	Version number	1.0	
Sector	Rubber	Drafted on	18/05/2016	
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016	
Occupation	Plastics Processing	Next review date	31/12/2021	









#### **CRITERIA FOR ASSESSMENT OF TRAINEES**

Job Role: Machine Operator Assistant – Plastics Processing

Qualification Pack Code:RSC/Q4801 (CPC/Q0103)

Sector Skill Council: Rubber Skill Development Council

#### **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 laydown 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 centre (as per assessment criteria below)
- 4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre 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 outcome Marks Alloc			s Allocation	
NOS	Performance Criteria	Total	Theory	Practical
1. RSC/N4801 (CPC/N0109):	PC1. Discuss the work order ( work output) required from the process and with the supervisor	6	2	4
Familiarization with basic concepts, job	PC2. Refer all components / process related documents to understand dimensions and properties of the required work output	6	2	4
requirements & basic related process.	PC3. Understand 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	6	2	4
	PC4. Clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/Work Instructions or defined by supervisors	6	2	4
	PC5. Understand the conversion procedure and process to be adopted for completing the work order from the supervisor by referring the Work Instruction document/ SOP manual	6	2	4
	PC6. Set the various parameters like temperature of the heaters, hydraulic pressure/air pressure/	6	2	4







			1	Т
	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			
	PC7. Understand the raw material like plastics			
	granules, bonding additives etc. required for	6	2	4
	executing the activity			
	PC8. Ensure that the required material is available	6	2	4
	before starting the process	6	2	4
	PC9. Understand the type of Mould /Die required for			
	executing the required conversion operation			_
	and ensure that the same is available for	6	2	4
	moulding operations			
	PC10. Ensure the availability of spare parts for	_	_	_
	continuous operation of machine	6	2	4
	PC11. Ensure that mould / Die are cleaned properly &			
	no foreign material is entrapped in parts of	6	2	4
	mould/die.	Ü	_	·
	PC12. Ensure cleaning of the other moulding machine			
	tools, auxiliaries(if any)	6	2	4
	PC13. Ensure cleaning of the area around the machine			
	for any oil, grease, water etc	6	2	4
	PC14. Consult with superiors in case of any			
	doubt/clarification	2	1	1
	PC15. Self-confidence after resolving the queries to			
	complete the task.	2	1	1
		1	0.5	1.5
	PC16. Report completion of work to superiors	2	0.5	1.5
	PC17. Good interpersonal relations with superiors &	2	0.5	1.5
	fellow operators.	<u>-</u>		
	PC18. Disciplined behavior in work place	2	0.5	1.5
	PC19. Good coordination with other department	2	0.5	1.5
	person for getting their support for work.		0.5	1.3
	Sub total	90	30	60
2. RSC/N4802	PC1. Discuss about the type of raw material being	3	1	2
(CPC/N0110)	used in the industry & for work Order			
:Basic	required for the process and with the supervisor			
Knowledge	PC2. Refer all material related documents to	8	2	6
about	understand properties of the required work			
different	output and able to identify the material			
plastic	PC3. Understand the process requirements for the	10	2	8
material	Plastics material in terms of temperature of the			
	heater, rotating speed of the Screw, pressure,			
	injection as mentioned in the Work Instruction			







	1	11-	T	I	
		/ SOP / Control Diagrams			
	PC4.	Understand the melting temperature,	10	2	8
		processing temperature etc. for plastic raw			
		material			
	PC5.	Understand the processing characteristics of	10	2	8
		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			
	PC6.	Ensure that the required material is available	10	2	8
		before starting the process			
		Ensure that the plastics material is blended with	9	1	8
		requisite additives		_	
		Ensure that machine / mould / Die are cleaned	9	1	8
		properly & no foreign material is entrapped in		_	
		parts of machine / mould / die.			
		Ensure cleaning of the materials spilled around	7	1	6
		the machine	,		0
	PC10.	Ensure cleaning of the area around the machine	4	1	3
		for any oil, grease, water etc			
	Sub to		80	15	65
3. RSC/N4803	PC1.	Assist in Planning work schedule in	2	4	2
(CPC/N0111):		concurrence with Superior	3	1	2
Familiarized	PC2.	Ensure availability of data sheet, manual, work	-		-
with various		instructions	6	1	5
Plastics	PC3.	For power supply, hydraulic oil level, water		_	•
processing		connections	6	2	4
techniques &	PC4.	Ensure availability of the tools ,materials &	_	2	4
to assist the		ancillary equipments for the work	6	2	4
Operator in	PC5.	Setup the equipment & machineries as per	_	2	4
Injection		the job requirement	6	2	4
moulding	PC6.	Understand Planning for Minimum wastage &	c	2	А
machine,		its safe disposal	6	2	4
Extrusion,	PC7.	Work in conformance to legal requirements,	C	2	4
Blow		organizational policies and procedures	6	2	4
Moulding etc.	PC8.	Ensure that the mould is ready & having no		2	Δ.
		problem in dry run	6	2	4
	PC9.	Check material is available for production. If	6	2	Δ.
		required arrange for pre drying	ס		4
	PC10.	Check the availibity & readiness of ancillary			
		equipments like chiller, mould Temperature	6	2	4
		controller, hopper loader, Cooling towers etc			
	PC11.			2	
		the hopper	6	2	4
		• •	I	1	







PC1	2. Observe to Set the parameters of the machine i.e. temperature, pressure, speed etc	6	2	4
PC1		6	1	5
PC1	·	6	1	5
PC1	5. Visual check of final product in consultation	6	1	5
201	with operator			
PC1	<ol> <li>Carry out post molding operation during the cycle time run such as. trimming, apply protective tapes, putting labels on each product for identification</li> </ol>	6	1	5
PC1	•	6	1	5
PC1	·	6	1	5
PC1	<ol> <li>Refer all components / process related documents to understand dimensions and properties of the required work output</li> </ol>	6	1	5
PC2	O. Understand 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	6	1	5
PC2	<ol> <li>Planning work schedule in concurrence with Operator</li> </ol>	6	1	5
PC2.	<ol> <li>Assist the operator to Obtain and check the data on the job card and carry out functions in line with the responsibilities of job role</li> </ol>	6	1	5
PC2	3. Ensure availability of data sheet, manual, work instructions	6	1	5
PC2	<ol> <li>Check for power supply, oil level in gear box, water connections</li> </ol>	6	1	5
PC2	5. Setup the equipment & machineries as per the job requirement	6	1	5
PC2		6	1	5
PC2	•	6	1	5
PC2		6	1	5







			1	
	organizational policies and procedures			
	PC29. Check material is available for production. Compounding / Color blending	3	1	2
	PC30. Check the availibity & readiness of ancillary equipments like air compressor, hopper loader, dehumidifier, Cooling towers etc	2	1	1
	PC31. Load the material in the hopper	2	0.5	1.5
	PC32. Set the parameters of the machine i.e. temperatures, speeds etc.	2	0.5	1.5
	PC33. Check the temperature on the barrel with respect to set temperature	2	0.5	1.5
	PC34. Conduct trial run to get extruded sample once machine is set	2	0.5	1.5
	PC35. Adjust parameters unless getting final product	2	0.5	1.5
	PC36. Visual check of final product	2	0.5	1.5
	PC37. Corona treatment & printing, if required	2	0.5	1.5
	PC38. Store the final product in specified area	2	0.5	1.5
	PC39. Clean the machine & equipments at regular interval	2	0.5	1.5
	PC40. Work in compliance with specified health and safety standards	2	0.5	1.5
	Sub total	190	45	145
4. RSC/N4101 (CPC/N0411):	PC1. Wear protective clothing/equipment for specific tasks and work conditions	2.5	0.5	2
Maintain basic health and	PC2. Carry out safe working practices while dealing with hazards to ensure the safety of self and others.	2.5	0.5	2
safety	PC3. Apply good housekeeping practices at all times	2.5	0.5	2
practices at the workplace,	PC4. Use the various appropriate fire extinguishers on different types of fires correctly	2.5	0.5	2
55	PC5. Demonstrate rescue techniques applied during fire hazard, demonstrate good housekeeping in order to prevent fire hazards, demonstrate the correct use of a fire extinguisher.	2.5	0.5	2
	PC6. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise, and Identify areas in the plant which are potentially hazardous/unhygienic in nature. Conduct regular checks with support of the maintenance team on machine health to identify potential hazards due to wear and tear of machine.	2.5	0.5	2
	PC7. Inform the concerned authorities on the potential risks identified in the processes, workplace area/ layout, materials used etc, Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during	2.5	0.5	2







0	perations.			
PC8.	Create awareness amongst other by sharing information on the identified risks.	2.5	0.5	2
PC9.	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.	2.5	0.5	2
PC10.	Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions	2.5	0.5	2
PC11.	Follow the technique of waste disposal and waste storage in the proper bins as per SOP	1.5	0.5	1
PC12.	Segregate the items which are labeled as red tag items for the process area and keep them in the correct places	1.5	0.5	1
PC13.	Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions	1.5	0.5	1
PC14.	Ensure that areas of material storage areas are not overflowing	1.5	0.5	1
PC15.	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			
PC16.	Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	1.5	0.5	1
PC17.	Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards.	1.5	0.5	1
PC18.	Follow the proper labelling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	1.5	0.5	1
PC19.	Check that the items in the respective areas have been identified as broken or damaged	1.5	0.5	1
PC20.	Follow the given instructions and check for levelling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same To avoid spillage, leakage, fire etc.	1.5	0.5	1
PC21.	Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions.	1.5	0.5	1
	Sub total	40	10	30
	Total	400	100	300