

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS & JEWELLERY INDUSTRY



Contents

1. Introduction and Contact..... P1
2. Qualifications PackP2
3. OS Units..... P3
4. Glossary of Key Terms.....P21
5. Nomenclature of QP & NOS.....P23

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
- OS are 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-Assayer and Hallmark Administrator

SECTOR: GEMS & JEWELLERY

SUB-SECTOR: Handmade Gold and Gems-Set Jewellery

OCCUPATION: Metal Alloying

REFERENCE ID: G&J/Q0402

ALIGNED TO: NCO-2004/ 7313.18

Assayer and Hallmark Administrator: The Assayer tests the precious-metal alloy or jewellery and analyses it to determine the proportion of gold or purity of gold. Based on the assaying results, the hallmark is assigned to indicate its level of purity.

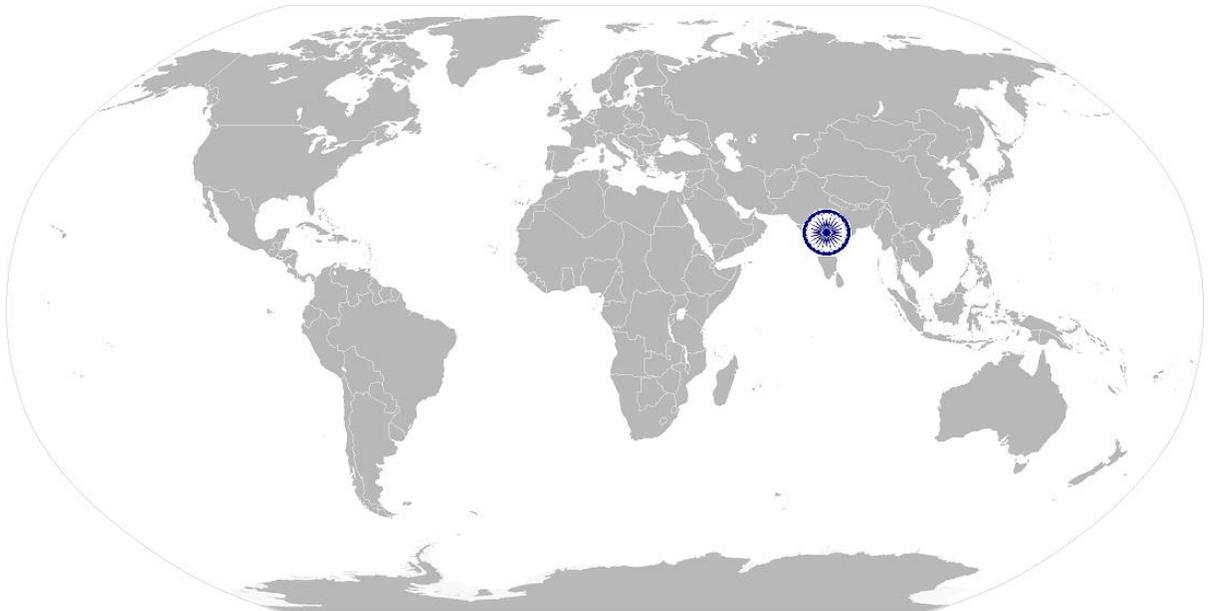
Brief Job Description: This individual at work tests the gold alloy metal or jewellery through various assaying processes and stamps the hallmark. Assaying involves multiple stages of assessment to determine the proportion of gold in the alloy. After performing the assaying process and analyzing the results, the precious metal or jewellery is marked with internationally defined symbols and characters for hallmarking.

Personal Attributes: The job requires the individual to have: integrity; attention to details; good eyesight; steady hands; ability to work in a process driven team and comply with standards. The individual must also be able to use reflective skills in order to avoid errors and hazards when dealing with sharp tools, machines of high temperature and chemicals.

Job Details	Qualifications Pack Code	G&J/Q0402		
	Job Role	Assayer and Hallmark Administrator		
	Credits(NSQF)	TBD	Version number	1.0
	Sector	Gems & Jewellery	Drafted on	28/08/13
	Sub-sector	Handmade and Gems-set Jewellery	Last reviewed on	13/08/14
	Occupation	Metal Alloying	Next review date	12/08/15

Job Role	Assayer and Hallmark Administrator
Role Description	Assaying the gold alloy metal or jewellery through various processes and hallmarking the product with pre-specified characters and logo as per the assaying result; assaying the product through multiple stages of processing and find accurately the gold composition in the product.
NSQF level	6
Minimum Educational Qualifications	B.Sc (Chemistry)
Maximum Educational Qualifications	
Training	Not applicable
Experience	Preferably 6 months in Gold Refining and Metal Alloying
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> G&J/N0402 Assay and Administer Hallmark on the precious-metal product G&J/N9910 Maintain IPR and respect copyright G&J/N9912 Coordinate with co-workers G&J/N9914 Maintain safe work environment Optional: Not applicable
Performance Criteria	As described in the relevant OS units

National Occupational Standard



Overview

This unit is about assaying or testing the gold metal alloy or gold jewellery to determine the composition of gold and other precious metal in the product. It is also about administering a Hallmark or the process of marking the product with international standards of purity based on the assaying results. This indicates the purity of product bought by the customer.

G&J/N0402

Assay and administer hallmark the gold product

National Occupational Standard

Unit Code	G&J/N0402
Unit Title (Task)	Assay and administer hallmark the gold alloy product
Description	This OS unit is about testing the gold metal alloy or gold jewellery to determine the proportion of gold in the product and hallmarking it with international standards of precious metal purity
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Perform preliminary assay process • Perform assaying through touchstone process • Prepare metal or jewellery for fire assay process and perform fire assay • Hallmark the product
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Preliminary assaying	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. receive precious-metal products for assaying</p> <p>PC2. use X-ray fluorescence (XRF) machine to test the product</p> <p>PC3. keep the product at various indicator points in the machine to test the composition of gold</p> <p>PC4. record the findings which are displayed in the screen / monitor</p> <p>PC5. find the composition of gold using XRF machine</p> <p>PC6. place the gold metal or jewellery in appropriate points and confirm the results</p> <p>PC7. record the findings in the specified format</p>
Touchstone assaying	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC8. receive goods or products for assaying</p> <p>PC9. rub the gold metal or jewellery onto a touchstone</p> <p>PC10. rub the gold needle of known Karatage on the side for visual comparison</p> <p>PC11. use the standard acids such as Nitric acid for testing and apply on both the rubbings using a dropper</p> <p>PC12. compare the colour of the rubbing of metal and test needle after acid application</p> <p>PC13. analyse the findings and record them</p> <p>PC14. find the composition of gold in the metal or jewellery using touchstone process</p> <p>PC15. use effectively the tools for touchstone method such as touchstone, test needle, test acids</p> <p>PC16. visually compare and identify the results of the testing process</p>
Fire assaying	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC17. select the gold products or cut pieces through standard sampling process according to Bureau of Indian Standards (BIS) norms</p> <p>PC18. melt the sample using furnace</p> <p>PC19. weigh the melted metal accurately using a digital weighing scale which is connected to a computer</p> <p>PC20. add some silver to gold pieces and cover them using lead foil such that it looks like a ball kind of structure</p>

G&J/N0402

Assay and administer hallmark the gold product

	<p>PC21. perform cupellation process by putting the lead foil containing silver and gold pieces into cupel and heating them at around 1100 degrees centigrade</p> <p>PC22. collect the gold, silver and any insoluble metals such as Rhodium, Iridium, etc.</p> <p>PC23. stamp the metal to make it flat</p> <p>PC24. anneal the metal and draw it to a roll form</p> <p>PC25. dip the rolled metal in nitric acid to remove the silver content (this is called parting stage)</p> <p>PC26. wash and dry the metal left out</p> <p>PC27. weigh the metal and compare the weight with before assay process to determine the composition of gold in the metal</p> <p>PC28. comply with the standards and perform the process accurately</p> <p>PC29. accurately weigh the product and record them at each stage of process</p> <p>PC30. operate equipments for cupellation process and set parameters appropriately such as temperature as per specification</p> <p>PC31. identify and handle different types of acids appropriately</p> <p>PC32. record the findings at each stage for tracking</p> <p>PC33. ensure that there is no mix up of different products during assaying process</p> <p>PC34. determine the composition (Karatage) of gold in the alloy after fire assay process by weighing them</p>
<p>Compliance to standards</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC35. perform all the necessary steps and tests in the assaying process to determine the gold Karatage</p> <p>PC36. execute the work in each stage as per the quality standards</p>
<p>Hallmarking</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC37. understand the result of the assaying process and hallmark sign to be printed</p> <p>PC38. use computer system and software such as CAD/CAM to enable laser printing</p> <p>PC39. set the size of print as per the size of jewel</p> <p>PC40. print the hallmark, which must consists of BIS logo, the fineness mark, mark of assaying and hallmarking centre and year of mark</p> <p>PC41. ensure that appropriate fineness mark is printed as per the assaying result</p> <p>PC42. print the gold metal or jewellery with appropriate hallmark sign using laser printing machine or any other equipment</p> <p>PC43. ensure that all the contents are printed as per BIS standard</p> <p>PC44. ensure that the fineness mark is printed according to the assaying process' result</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The individual on the job needs to know and understand:</p> <p>KA1. company's policies on: acceptable limits of precious metal loss per product type, delivery timelines, safety and hazards, security, IPR, and personnel management</p> <p>KA2. importance of the individual's role in the workflow</p> <p>KA3. reporting structure</p> <p>KA4. documentation procedure followed in the organisation</p> <p>KA5. quality standards followed by the company</p> <p>KA6. typical customer profile and market trends</p>

G&J/N0402

Assay and administer hallmark the gold product

<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. different types of assaying process such as using XRF machine, touchstone method and fire assay process</p> <p>KB2. different types of hallmarks for different Karatages</p> <p>KB3. properties of various metals involved in gold jewellery and testing processes such as silver, iridium, etc.</p> <p>KB4. chemicals used in testing process and their properties</p> <p>KB5. operation of different equipment used in the assaying process such as XRF machine, cupellation process machine.</p> <p>KB6. compliance requirement in each stage of assaying process</p> <p>KB7. parameters to be considered for finding the Karatage of gold in the product</p> <p>KB8. touchstone usage, scraping technique and visual comparison of the rubbings to find Karatage</p> <p>KB9. contents of the hallmark sign and their purpose</p> <p>KB10. to use computer system for recording of finding and documenting them</p> <p>KB11. potential work hazards while using high temperature machines and chemicals</p> <p>KB12. safety precautionary measures while handling hot metals and hazardous chemicals</p>
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Basic reading and writing skills</p> <p>The user/individual on the job needs to know and understand how:</p> <p>SA1. to read documents and records relating to gold product</p> <p>SA2. to record the weight and findings during assay process</p> <p>Calculation skills</p> <p>The user/individual on the job needs to know and understand how:</p> <p>SA3. to accurately record the weight of gold metal or jewellery in each steps of assaying as per standards</p> <p>SA4. to calculate the composition of gold (Karatage) after completion of assay process using the weight</p> <p>Teamwork and some multitasking</p> <p>The user/individual on the job needs to know and understand how:</p> <p>SA5. to share work load as required</p> <p>SA6. to deliver metal or jewellery to next work process on time</p>
<p>B. Professional Skills</p>	<p>Reading notes</p> <p>The user/individual on the job needs to know and understand:</p> <p>SB1. how to read notes on the gold metal or jewellery and use equipments and testing materials accordingly</p> <p>SB2. How to read notes on gold jewellery regarding Karatage and use correct test needle for rubbing process in touchstone method</p> <p>Using tools, machines and materials</p> <p>The user/individual on the job needs to know and understand how:</p>

G&J/N0402

Assay and administer hallmark the gold product

	<p>SB3. to use the XRF machine</p> <p>SB4. to use the equipments and materials used in touchstone method</p> <p>SB5. to use equipment in cupellation process and usage of appropriate chemicals in parting process</p> <p>SB6. to understand safety procedures and hazards involved in handling machines and chemicals</p>
	<p>Hallmarking</p>
	<p>The user/individual on the job needs to know and understand:</p> <p>SB7. how and where to print the hallmark symbol in the gold metal or jewellery</p> <p>SB8. the contents of a hallmark symbol and their purpose</p>
	<p>Compliance to quality standards</p>
	<p>The user/individual on the job needs to know and understand:</p> <p>SB9. the necessary steps to be followed in each stage of assaying process</p> <p>SB10. the organisational requirement in following the quality standards in the process</p>
	<p>Critical thinking</p>
	<p>The user/individual on the job needs to know and understand how:</p> <p>SB11. to spot process disruptions and delays</p>

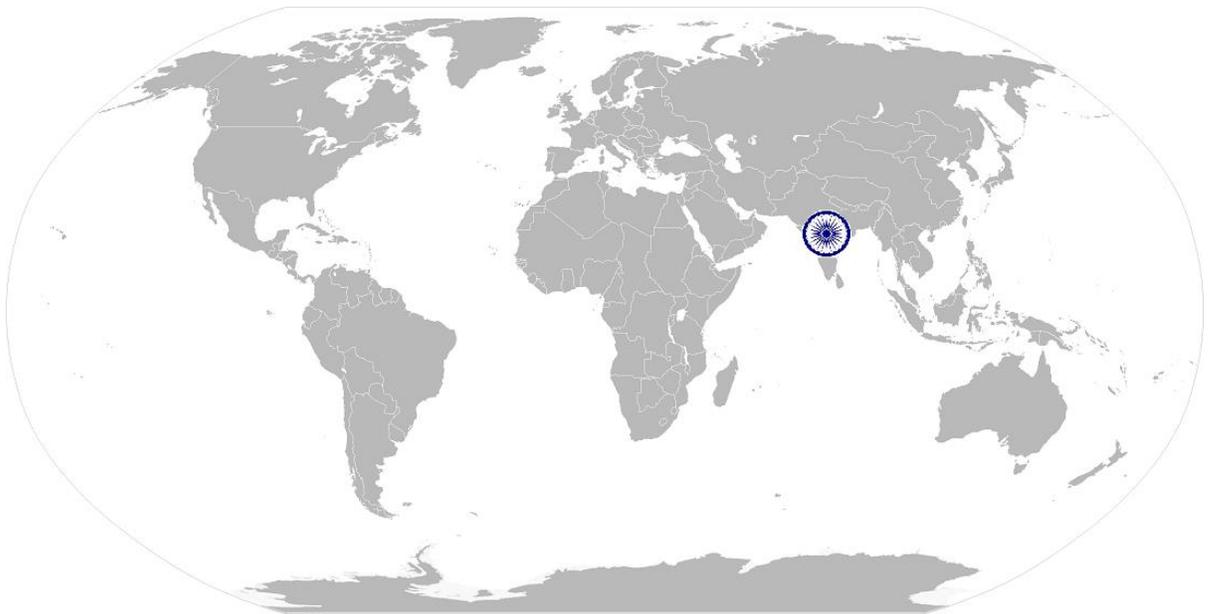
G&J/N0402

Assay and administer hallmark the gold product

NOS Version Control

NOS Code	G&J/N0402		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	28/08/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15

National Occupational Standard



Overview

This unit is about and respecting intellectual property rights (IPR) of the company's products and designs and avoiding infringement on copyrights of others.

G&J/N9910

Maintain IPR and respect copyright

National Occupational Standard

Unit Code	G&J/N9910
Unit Title (Task)	Respect IPR of company as well as competitors
Description	This OS unit is about maintaining company's IPR and avoiding infringement on copyright of others
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Protect company's Intellectual Property Rights (IPR) Avoid infringement to copyright of other companies
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Respecting IPR	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. prevent leak of new designs to competitors by reporting on time</p> <p>PC2. spot any infringement of company's product or design patents</p> <p>PC3. report IPR violations observed in the market, to supervisor or company heads</p> <p>PC4. read copyright clause of the material published on the internet and any other printed material</p> <p>PC5. consult supervisor or senior management when in doubt about using publicly available information</p> <p>PC6. report any infringement observed in the company</p> <p>PC7. spot plagiarism and report</p> <p>PC8. understand rationale of patents and IPR</p> <p>PC9. avoid being involved in IPR violations</p>
Knowledge and Understanding (K)	
A. Organizational Context	<p>The individual on the job needs to know and understand:</p> <p>KA1. company's policies on IPR, plagiarism and order leaks</p> <p>KA2. company's patented products</p> <p>KA3. market trends and company's unique product range</p> <p>KA4. reporting structure</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. basics of patents and IPR laws</p> <p>KB2. how IPR protection is important for competitiveness of a company</p>
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Communication skills
	<p>The user/individual on the job needs to know and understand how:</p> <p>SA1. to effectively communicate any observed IPR violations or design leaks</p>
B. Professional Skills	Decision making
	<p>The user/individual on the job needs to know and understand when and how:</p> <p>SB1. to report sources of IPR violations</p>

G&J/N9910

Maintain IPR and respect copyright

	Reflective thinking
	The user/individual on the job needs to know and understand how: SB2. to learn from past mistakes and report IPR violations on time
	Critical thinking
	The user/individual on the job needs to know and understand how: SB3. to spot signs of violations and alert authorities in time

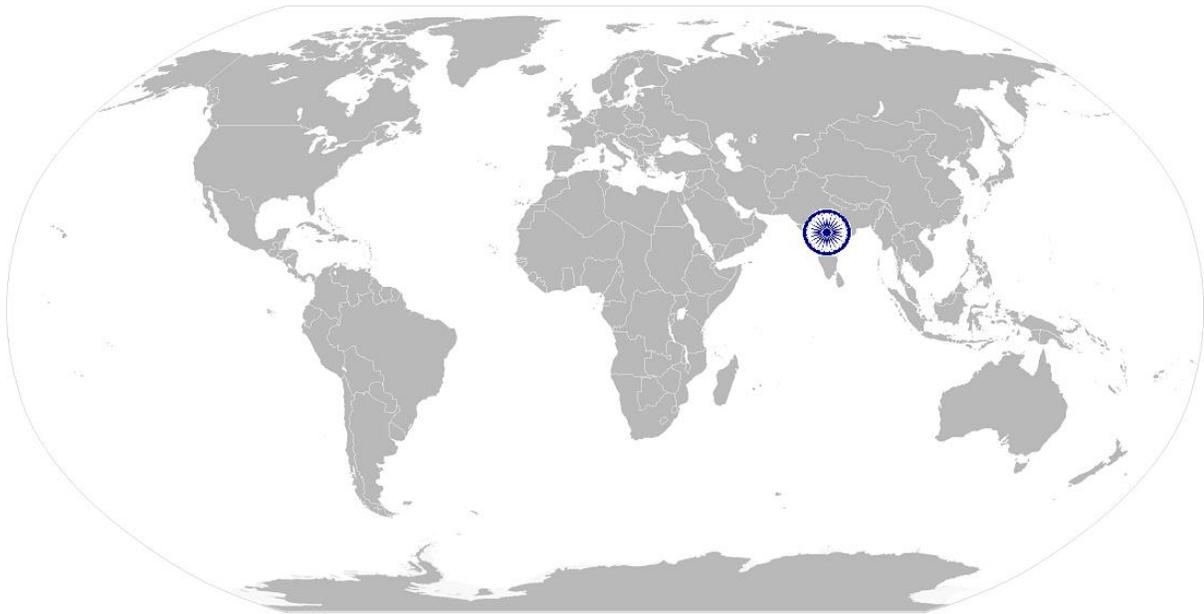
G&J/N9910

Maintain IPR and respect copyright

NOS Version Control

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Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
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Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15

National Occupational Standard



Overview

This unit is about the artisan or bench worker's level of communication with colleagues or clients. It determines the goldsmith's ability to work as a team member, share work and multi-task in order to achieve the required deliverables on schedule.

G&J/N9912

Coordinate with co-workers

National Occupational Standard

Unit Code	G&J/N9912
Unit Title (Task)	Interact with colleagues and seniors
Description	This OS unit is about communicating with colleagues and seniors in order to maintain smooth ad hazards free work flow
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Interact with supervisor • Interact with colleagues within and outside the department
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interaction with supervisor	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. receive and understand work instructions from reporting superior</p> <p>PC2. communicate to reporting supervisor about process flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required</p> <p>PC3. communicate any potential hazards or expected process disruptions</p> <p>PC4. handover completed work to supervisor</p> <p>PC5. understand the work output requirements</p> <p>PC6. comply with company policy and rule</p> <p>PC7. deliver quality work on time as required by reporting any anticipated reasons for delays</p>
Interactions with colleagues and other departments	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC8. work as a team with colleagues and share work as per their or own work load and skills</p> <p>PC9. work with colleagues of other departments such as frame making or component making or polishing or setting or stores</p> <p>PC10. communicate an discuss work flow related difficulties in order to find solutions with mutual agreement</p> <p>PC11. receive feedback from QC and rework in order to complete work on time</p> <p>PC12. put team over individual goals</p> <p>PC13. resolve conflicts and multi-task</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. company's policies on personnel management</p> <p>KA2. work flow involved in company's jewellery manufacturing process</p> <p>KA3. importance of the individual's role in the workflow</p> <p>KA4. reporting structure</p>

G&J/N9912

Coordinate with co-workers

<p>B. Technical Knowledge</p>	<p>The individual on the job needs to know and understand:</p> <p>KB1. how to communicate effectively</p> <p>KB2. how to build team coordination</p>
<p>Skills (S) [Optional]</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Teamwork and some multitasking</p> <p>The individual on the job needs to know and understand how:</p> <p>SA1. to share work load as required</p> <p>SA2. to deliver product to next work process on time</p>
<p>B. Professional Skills</p>	<p>Decision making</p> <p>The individual on the job needs to know and understand:</p> <p>SB1. how to report potential areas of disruptions to work process</p> <p>SB2. when to report to supervisor and when to deal with a colleague depending on the type of concern</p> <p>Reflective thinking</p> <p>The individual on the job needs to know and understand:</p> <p>SB5. how to improve work process</p> <p>Critical thinking</p> <p>The individual on the job needs to know and understand:</p> <p>SB6. how to spot process disruptions and delays</p>

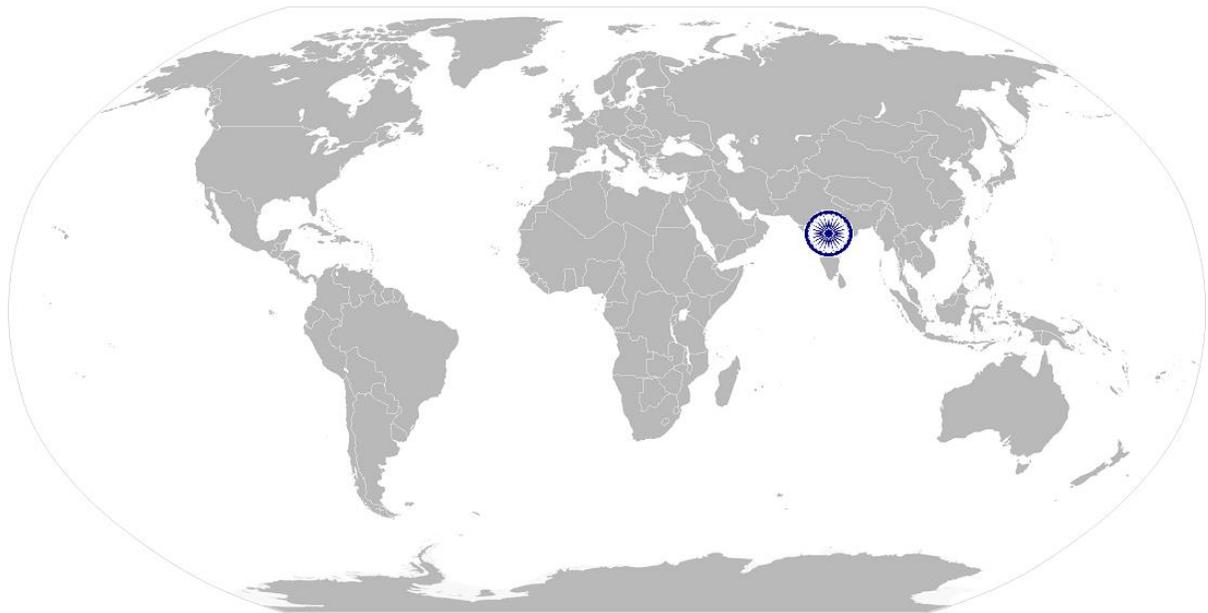
G&J/N9912

Coordinate with co-workers

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NOS Code	G&J/N9912		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
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Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15

National Occupational Standard



Overview

This unit is about the artisan or bench worker's commitment towards reporting potential hazards and containing accidents in order to make the work environment safe for self and colleagues.

G&J/N9914

Maintain safe work environment

National Occupational Standard

Unit Code	G&J/N9914
Unit Title (Task)	Work towards having a safe work environment
Description	This OS unit is about being aware of and communicating potential hazards and dangers of accidents on the job
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Understand potential sources of accidents • Communicate to reporting supervisor about hazards in time
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Understanding of potential sources of accidents and communicating	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. avoid accidents related to use of potentially dangerous chemicals, gas torches, sharp tools and hazards from machines</p> <p>PC2. suggest process flow improvements to reduce anticipated or repetitive hazards</p> <p>PC3. report mishandling of tools, machines or hazardous materials</p> <p>PC4. identify electrical problems that could result in accident</p> <p>PC5. spot and report potential hazards on time</p> <p>PC6. follow company policy and rules regarding hazardous materials</p> <p>PC7. deliver quality work on time as required by reporting any anticipated reasons for delays</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. company's policies on handling: harmful chemicals and sharp tools, safety and hazards of machines, fire safety and, disposal of harmful chemicals and materials</p> <p>KA2. work flow involved in company's jewellery manufacturing process</p> <p>KA3. importance of the individual's role in the workflow</p> <p>KA4. reporting structure</p>
B. Technical Knowledge	<p>The individual on the job needs to know and understand:</p> <p>KB1. how different chemicals react and what could be the danger from them</p> <p>KB2. how to use machines and tools without causing bodily harm</p> <p>KB3. fire safety education</p> <p>KB4. disposal of hazardous chemicals, tools and materials by following prescribed environmental norms or as per company policy</p>
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Communication skills
	<p>The individual on the job needs to know and understand how:</p> <p>SA1. to effectively communicate the danger</p>

G&J/N9914

Maintain safe work environment

B. Professional Skills	Decision making
	The individual on the job needs to know and understand: SB1. importance of reporting potential sources of danger SB2. appropriate actions to be taken in the event of an accident SB3. process for disposing of hazardous materials, safely and following environmental guidelines
	Reflective thinking
	The individual on the job needs to know and understand how: SB4. to learn from past mistakes regarding use of hazardous machines or chemicals or gas torches
	Critical thinking
	The individual on the job needs to know and understand: SB5. how to spot danger SB6. procedures to follow in the event of a fire or other hazard

G&J/N9914

Maintain safe work environment

NOS Version Control

NOS Code	G&J/N9914		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	28/08/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15

Definitions

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business 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.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or an 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.
Sub-function	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (OS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
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.
Scope	Scope is a 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 quality of performance required.
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.

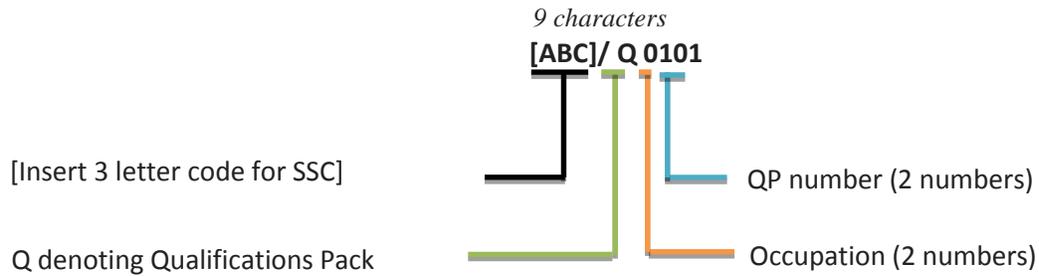
Acronyms

Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills	Core skills or generic skills are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment 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.
Keywords /Terms	Description
IPR	Intellectual Property Rights
NOS	National Occupational Standard(s)
NVQF	National Vocational Qualifications Framework
NSQF	National Qualifications Framework
NVEQF	National Vocational Education Qualifications Framework
QP	Qualifications Pack

Annexure

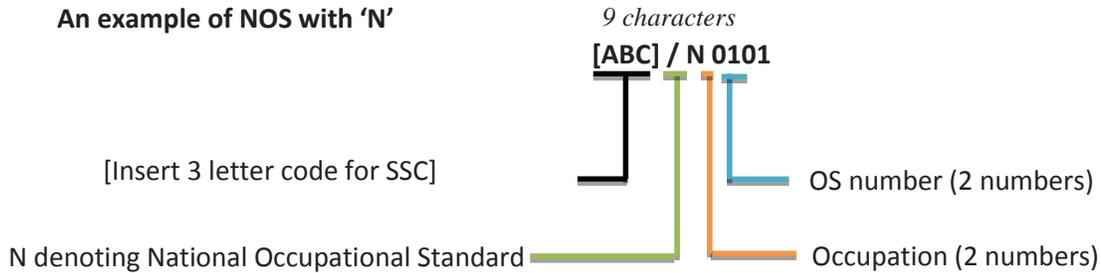
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



[Back to top...](#)

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Handmade gold and gems-set jewellery	01-20
Cast and diamond-set jewellery	21-40
Diamond processing	41-60
Gemstone processing	61-80
Jewellery retailing	81-98

Sequence	Description	Example
Three letters	Industry name	G&J
Slash	/	/
Next letter	Whether QP or NOS	Q
Next two numbers	Occupation code	07
Next two numbers	OS number	02

CRITERIA FOR ASSESSMENT OF TRAINEES				
Job Role		Assayer & Hallmarker		
Qualification Pack		Assayer & Hallmarker		
Sector Skill Council		GEMS & JEWELLERY		
To pass the Assessment, a candidate needs to score 50% in Theory and 70% in Practical				
Assessment Strategy			Marks Allocation	
NOS	Elements	Performance Criteria	Theory	Practical
1. G&J/N0402 Assay and Administer Hallmark on the precious-metal product	Preliminary assaying	PC1. find the composition of gold using XRF machine	1	8
		PC2. place the gold metal or jewellery in appropriate points and confirm the results	1	6
		PC3. record the findings in the specified format	2	6
	Touchstone assaying	PC4. find the composition of gold in the metal or jewellery using touchstone process	0	6
		PC5. use effectively the tools for touchstone method such as touchstone, test needle, test acids	1	6
		PC6. visually compare and identify the results of the testing process	0	6
	Fire assaying	PC7. comply with the standards and perform the process accurately	1	6
		PC8. accurately weigh the product and record them at each stage of process	1	4
		PC9. operate equipments for cupellation process and set parameters appropriately such as temperature as per specification	0	4
		PC10. identify and handle different types of acids appropriately	1	4
		PC11. record the findings at each stage for tracking	0	3
		PC12. ensure that there is no mix up of different products during assaying process	1	3
	Compliance to standards	PC13. determine the composition (Karatage) of gold in the alloy after fire assay process by weighing them	0	2
		PC14. perform all the necessary steps and tests in the assaying process to determine the gold Karatage	1	2
	Hallmarking	PC15. execute the work in each stage as per the quality standards	0	1
		PC16. print the gold metal or jewellery with appropriate hallmark sign using laser printing machine or any other equipment	0	1
		PC17. ensure that all the contents are printed as per BIS standard	0	1
		PC18. ensure that the fineness mark is printed according to the	0	1

<u>CRITERIA FOR ASSESSMENT OF TRAINEES</u>				
		assaying process' result		
		Sub Total	10	70
2. G&J/N9910 Maintain IPR and respect copyright	Respecting IPR	PC1. spot plagiarism and report	1	0
		PC2. understand rationale of patents and IPR	1	0
		PC3. avoid being involved in IPR violations	1	0
		Sub Total	3	0
3. G&J/N9912 Coordinate with others	Interaction with supervisor	PC1. Understand the work output requirements	1	2
		PC2. Understand company policy and rule	1	0
		PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays	1	1
	Interactions with colleagues and other departments	PC4. Put team over individual goals	1	1
		PC5. Conflicts resolution and multi-tasking	0	1
		Sub Total	4	5
4. G&J/N9914 Maintain safe and clean work environment	Understanding of potential sources of accidents and communicating	PC1. Spot and report potential hazards on time	1	2
		PC2. Follow company policy and rules regarding use of hazardous materials	1	2
		PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays	1	1
		Sub Total	3	5
		Total	20	80

