

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS & JEWELLERY 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
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

Contact Us:
GJSCI, Mumbai

E-mail: coo@gjsi.org



Contents

1. Introduction and Contact..... P1
2. Qualifications Pack P2
3. OS Units..... P3
4. Glossary of Key Terms.....P21
5. Nomenclature of QP & NOS.....P23

Introduction

Qualifications Pack-Melter and Refiner

SECTOR: GEMS & JEWELLERY

SUB-SECTOR: Handmade gold and gems-set jewellery

OCCUPATION: Metal Alloying

REFERENCE ID: G&J/Q0401

ALIGNED TO: NCO-2004/7313.18

Order processor: Also called 'Alloy maker', the Melter and Refiner recovers gold after melting and refining scrap gold ornaments or those received from jewellery manufacturing and converts gold into alloys.

Brief Job Description: The individual recovers gold from jewellery pieces, gold scrap, and dust collected at different stages of jewellery manufacturing, by operating melting furnace and chemical processes to recover gold in the pure form and converts into an alloy.

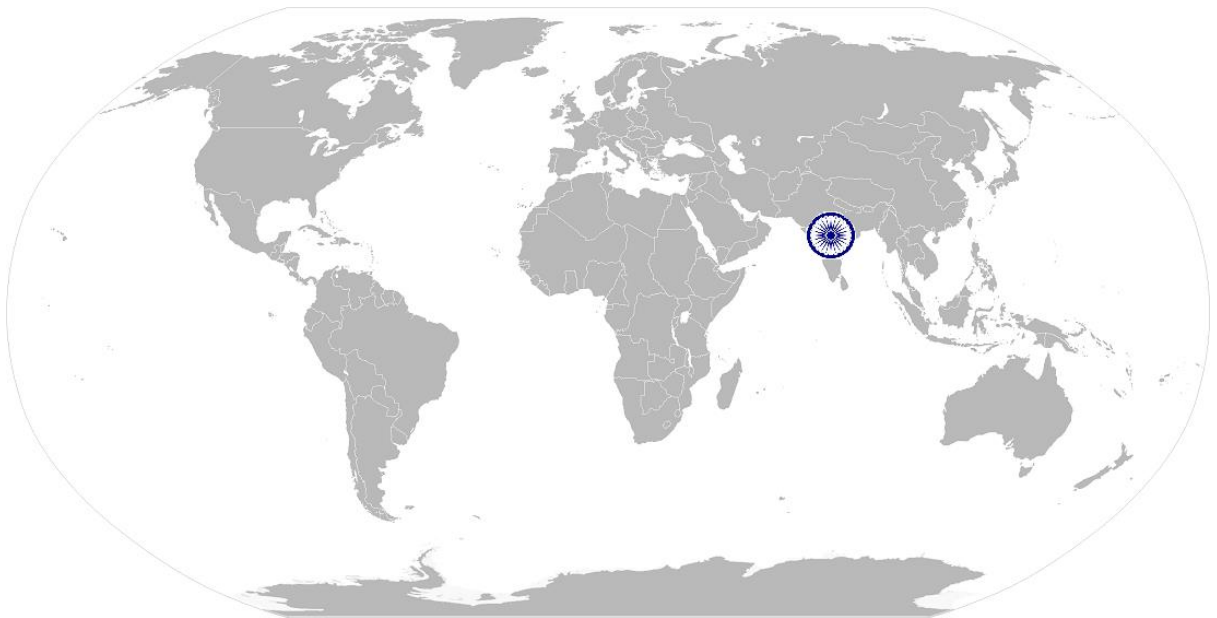
Personal Attributes: The job requires the individual to have: attention to details; ability to multitask in a process driven team; ability to work in a high temperature environment for long hours; and safely handling hazardous chemicals. The individual is expected to have integrity in dealing with precious metal.

Job Details

Qualifications Pack Code	G&J/Q0401		
Job Role	Melter and Refiner		
Credits(NVEQF/NVQF/NSQF)	TBD	Version number	1.0
Sector	Gems & Jewellery	Drafted on	14/04/13
Sub-sector	Handmade and Gems-set Jewellery	Last reviewed on	30/07/13
Occupation	Metal alloying	Next review date	15/07/15

Job Role	Melter and Refiner Also called Alloy maker
Role Description	Recovering gold and precious metals from jewellery, scrap and dust by using refining process and then melts with metals to make alloy
NVEQF/NVQF level	7
Minimum Educational Qualifications	B.Sc. (Chemistry)
Maximum Educational Qualifications	
Training	Not Applicable
Experience	Not Applicable
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> G&J/N0401 Melt, recover gold and make alloy 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 melting, recovering and refining gold, which is a critical step in jewellery manufacturing process. The objective of this unit is to convert discarded jewellery, scrap and gold dust into pure gold for re-alloying and use in new jewellery manufacturing.

G&J/N0401

Melt, recover gold and make alloy

National Occupational Standard

Unit Code	G&J/N0401
Unit Title (Task)	Melt, recover and refine gold from jewellery, scrap and gold dust and make alloy
Description	This OS unit is about recovering gold from jewellery pieces, scrap and dust and melting into pure gold or alloy
Scope	<p>This unit/task covers the following:</p> <p>Collect material and consumables from stores and other departments</p> <ul style="list-style-type: none"> collect old and discarded jewellery pieces from marketing collect scrap and dust from different stages of jewellery manufacturing weigh the amount of material collected <p>Identify the type of refining process to be used</p> <ul style="list-style-type: none"> read analysis reports to determine the gold content in refinable material assess the metals to be removed and purity of gold to be achieved after refining assess if a clean-up is adequate for reuse or full refining is needed for pure gold determine the extent to which a refining process is capable of achieving pure gold determine if a grain refiner is required, the metal to be used for it and quantity <p>Separate base metals from precious metals using Cupellation process</p> <ul style="list-style-type: none"> add Lead to unrefined gold in porous bone-ash crucibles or cupels for small-scale refining heat in air to melt the metals and dissolve in Lead allow base metal oxides to be absorbed in the cupels leaving behind metallic beads of precious metals such as Gold, Silver and Platinum send the precious metal alloy for further separation of Gold and other metals for large-scale Cupellation, smelt with flux of precious metal, iron-sulphide and lead oxide to form Lead bullion, slag and Matte of Copper allow base metal oxides to be absorbed in the cupels leaving behind metallic beads of precious metals such as Gold, Silver and Platinum send the precious metal alloy for further separation of Gold and other metals <p>Remove base metals and silver using Iquartation and Parting method for large scale refining</p> <ul style="list-style-type: none"> melt non-Platinum Group Metals (PGM)-gold with silver or copper to reduce the gold content to less than 25 percent granulate the melt and treat with Nitric acid filter to remove the pure Gold left behind after silver and other base metals are dissolved in Nitric acid <p>Use Miller process to remove base metals and silver for large scale refining</p> <ul style="list-style-type: none"> add gold scrap to crucible for melting

G&J/N0401

Melt, recover gold and make alloy

	<ul style="list-style-type: none"> • pass bubble chlorine gas through molten metal • take extra care in handling chlorine gas • bail out gradually forming chloride slag of base metals and silver • stop the process when purple fumes emanate • send for further electrolytic refining if purity content needed is higher than 99.5 per cent and to remove PGMs • treat slag with sodium carbonate to recover any Gold trapped in Silver <p>Remove PGMs using Wohlwill Electrolytic process for large scale refining</p> <ul style="list-style-type: none"> • use refined gold obtained from Miller process and cast into anodes • electrolyse in gold chloride and hydrochloric acid • wash, dry, melt and granulate pure gold of 99.99 per cent deposited on the cathode • treat spent electrolyte to recover Platinum and Palladium • filter anode slimes formed at bottom of cell and treat to recover gold <p>Recover and refine gold using Aqua Regia Process</p> <ul style="list-style-type: none"> • melt dust at specific temperature for time period as per operating standards • granulate (make fine powder of the dust) and screen the metal • remove ferrous metal by using magnetic plate • prepare Aqua Regia solution (of hydrochloric acid and nitric acid) as per proportion required • boil granules in Aqua Regia solution as specified to dissolve the molten gold • add urea to remove nitric acid fumes • pass solution through filter and collect molten gold at the bottom of filtration unit • add ferrous sulphate in the beaker containing gold • leave the solution until it changes colour from green to black, the bottom of the solution containing heavy metal including gold • decant top solution containing dust and other light metals • boil heavy metal in hydrochloric acid to clean the impurities and blackness on gold • wash metal in plain water until the solution neutralises • dry recovered gold on hot plate • melt again in furnace crucible and pour in metal mould to form 24K gold rod/ bar • for diamond studded jewellery, after dissolving metal into Aqua Regia solution, collect the diamond at the bottom of container <p>Remove base metals except Copper using Pyro-metallurgical process</p> <ul style="list-style-type: none"> • smelt scrap gold under a flux • pass bubble air or oxygen through molten metal • remove slag containing combined impurities • send recovered gold alloy for analysis of copper or any remaining base metal content
--	--

G&J/N0401

Melt, recover gold and make alloy

	<p>Melt and form pure gold or alloy</p> <ul style="list-style-type: none"> • melt recovered gold in furnace crucible and pour in metal mould to form 24K gold bar or rod • weigh metals in proportion or alloying • pickle all metals and clean thoroughly • mix all metals, except gold, in a crucible fluxed with Borax • melt the metals with a reducing flame starting with highest melting point, do not bring the metal to boil • stir constantly with carbon stirring rod • add fine gold to the molten metal • pour molten gold alloy into gold ingot or depression in a charcoal block • check for brittleness of alloy or colour streaks, both indicating improper alloying • re-melt and remix with carbon stirring rod for accurate alloying <p>Maintain refining and melting unit and record</p> <ul style="list-style-type: none"> • clean the unit regularly • schedule annual maintenance • maintain records of refining and alloying • record gold dust, scrap an jewellery collected and materials returned • record any damage to gemstones • record recovery percentage and weight of pure gold bar or alloy <p>Report problems related to:</p> <ul style="list-style-type: none"> • furnace malfunction • repeated re-melting and remixing if necessary • any damage because of chemicals involved
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Recovering, refining and alloying of gold	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. accurately compute proportions of mix of different solutions required for the amount of dust and scrap collected</p> <p>PC2. apply operating parameters required for different alloys</p> <p>PC3. make optimum recovery of gold and precious metals</p> <p>PC4. ensure no brittleness or colour streaks in alloyed metal or gold</p> <p>PC5. achieve zero impurities or ash on gold</p> <p>PC6. achieve zero accidents while handling chemicals and molten metal</p>
Productivity	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC7. Plan well for optimum use of refining plant</p> <p>PC8. achieve total quantity of scrap and dust processed against target</p> <p>PC9. maximise percentage of gold recovered</p>
Quality of output	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC10. achieve purity of the recovered gold as per industry specified standards</p> <p>PC11. achieve minimal cracking, porosity and contamination</p> <p>PC12. achieve QC-okayed metal and no defects while remaking jewellery later</p>

G&J/N0401

Melt, recover gold and make alloy

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: Acceptable limits of gold loss per product type; incentives; delivery standards; safety and hazards; integrity; and 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>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. assaying process</p> <p>KB2. properties of pure gold and alloys such as malleability, ductility, bleaching</p> <p>KB3. impurities present in gold jewelry, dust and scrap and the method for separating them from gold</p> <p>KB4. gold karatages and proportion of mixing other metals such as silver, copper, zinc, palladium in order to form alloy</p> <p>KB5. how to lower or increase karatage of alloy</p> <p>KB6. uses of different refining processes for different purposes and end results</p> <p>KB7. refining process planning</p> <p>KB8. sources of error in achieving desired purity of refined gold</p> <p>KB9. melting point of different alloying metals</p> <p>KB10. annealing for ductility and temperature effect on alloyed metals</p> <p>KB11. types of precious metals and gemstones used</p> <p>KB12. different types of jewellery and their making technique, e.g., casting or handmade</p> <p>KB13. different types of components used in jewellery and their making techniques</p> <p>KB14. level of acid resistance of different types of gemstones</p>
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Reading and typing skills
	<p>The user/individual on the job needs to know and understand how:</p> <p>SA1. to read assay reports</p> <p>SA2. to read design notes and operating procedure for refining and melting unit</p> <p>SA3. to read company rules and compliance documents required to complete the work</p>
	Calculation skills
	<p>The user/individual on the job needs to know and understand:</p> <p>SA4. to calculate alloying mix and solution mix proportions</p> <p>SA5. to weigh dust and scrap in order to mix alloying metal for optimum results</p>
	Teamwork and multitasking
	<p>The user/individual on the job needs to know and understand how:</p> <p>SA6. to deliver refined and alloyed gold to stores in time</p> <p>SA7. to share knowledge with co-workers</p>

G&J/N0401

Melt, recover gold and make alloy

B. Professional Skills	Refining unit management
	The user/individual on the job needs to know and understand how:
	SB1. how to operate the refining, melting and alloying unit
	SB2. handle the different stages of refining process
	SB3. adhere to time schedule for melting/ smelting process
	SB4. handle recovered gold and other base metals and PGMs
	SB5. record outcomes of refining, melting and alloying as per company rules
	Using tools and machines
	The user/individual on the job needs to know and understand how:
	SB6. to use appropriate tools for holding the crucible or stirring such as different types of holders or carbon stirring rod
	SB7. to operate the furnace at appropriate temperatures by reducing heat for melting alloying metals or melting gold
	SB8. to use chemicals such as ferrous sulphate, hydrochloric acid, nitric acid, and borax without any hazards
	Reducing precious metal loss
	The user/individual on the job needs to know and understand:
	SB9. how to reduce precious metal loss below the prescribed standards
	SB10. how to collect broken pieces, account in job sheet and return
	SB11. how to follow company's policies on collecting gold dust and fragments
	SB12. how to suggest improvements in order to reduce precious metal loss limits
	Reflective thinking
	The user/individual on the job needs to know and understand how:
	SB13. to improve work process
	SB14. to improve recovery percentage and purity of gold
	Critical thinking
	The user/individual on the job needs to know and understand how:
	SB15. to anticipate process disruptions and reasons for delay

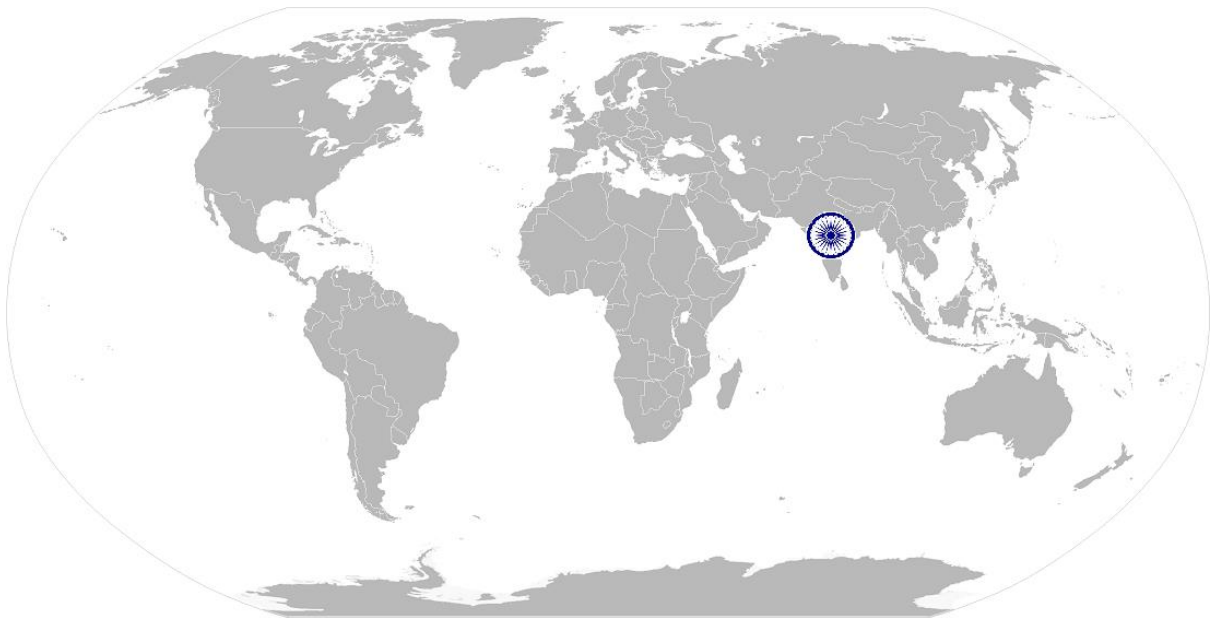
G&J/N0401

Melt, recover gold and make alloy

NOS Version Control

NOS Code	G&J/N0401		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	14/06/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	30/07/13
		Next review date	15/07/15

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> <p>Protect company's Intellectual Property Rights (IPR)</p> <ul style="list-style-type: none"> prevent leak of new designs to competitors by reporting on time be aware of any of company's product or design patents report IPR violations observed in the market, to supervisor or company heads <p>Avoid infringement to copyright of other companies</p> <ul style="list-style-type: none"> read copyright clause of the material published on the internet and any other printed material consult supervisor or senior management when in doubt about using publicly available information report any infringement observed in the company
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. spot plagiarism and report</p> <p>PC2. understand rationale of patents and IPR</p> <p>PC3. 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

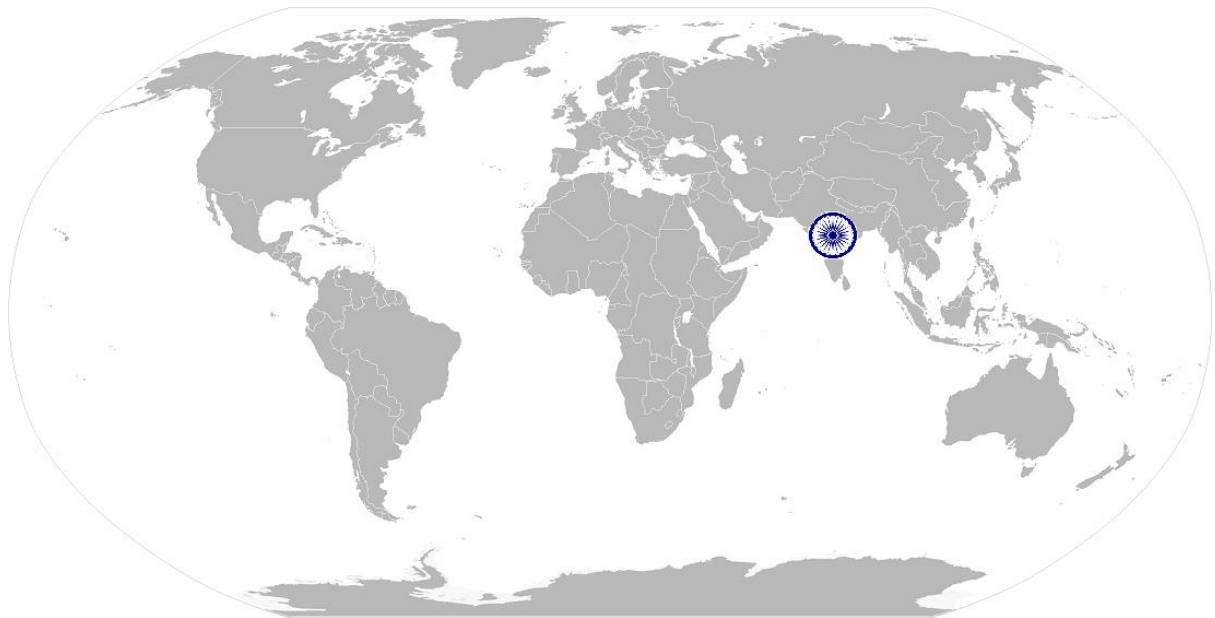
G&J/N9910

Maintain IPR and respect copyright

NOS Version Control

NOS Code	G&J/N9910		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	14/04/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	30/07/13
		Next review date	15/07/15

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)	Coordinate with co-workers
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> <p>Interact with supervisor to:</p> <ul style="list-style-type: none"> • receive work instructions and raw materials from reporting supervisor • communicate to reporting supervisor about process flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required • communicate any potential hazards or expected process disruptions • handover completed work to supervisor <p>Interact with colleagues within and outside the department to:</p> <ul style="list-style-type: none"> • work as a team with colleagues and share work as per their or own work load and skills • work with colleagues of other departments such as frame making or component making or polishing or setting or stores • communicate an discuss work flow related difficulties in order to find solutions with mutual agreement • receive feedback from QC and rework in order to complete work on time
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. understand the work output requirements</p> <p>PC2. comply with company policy and rule</p> <p>PC3. 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>PC4. put team over individual goals</p> <p>PC5. conflicts resolution and multi-tasking</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

B. Technical Knowledge	<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>
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	<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>
B. Professional Skills	<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>SB3. how to improve work process</p> <p>Critical thinking</p> <p>The individual on the job needs to know and understand:</p> <p>SB4. how to spot process disruptions and delays</p>

G&J/N9912

Coordinate with co-workers

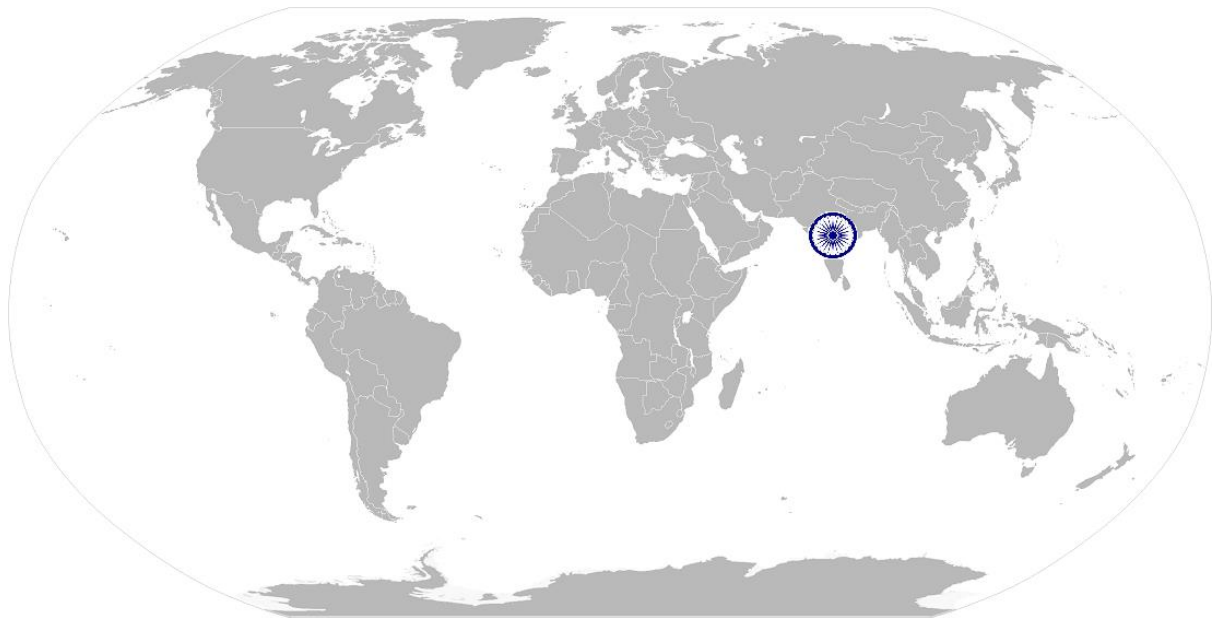
NOS Version Control

NOS Code	G&J/N9912		
Credits(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	14/04/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	30/07/13
		Next review date	15/07/15

G&J/N9914

Maintain safe work environment

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> <p>Understand potential sources of accidents</p> <ul style="list-style-type: none"> to avoid accidents related to use of potentially dangerous chemicals, gas torches, sharp tools and hazards from machines <p>Communicate to reporting supervisor about:</p> <ul style="list-style-type: none"> process flow improvements to reduce anticipated or repetitive hazards mishandling of tools, machines or hazardous materials electrical problems that could result in accident
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. spot and report potential hazards on time</p> <p>PC2. follow company policy and rules regarding hazardous materials</p> <p>PC3. 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. procedure 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. procedure 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(NVEQF/NVQF/NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	14/04/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	30/07/13
		Next review date	15/07/15

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.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish

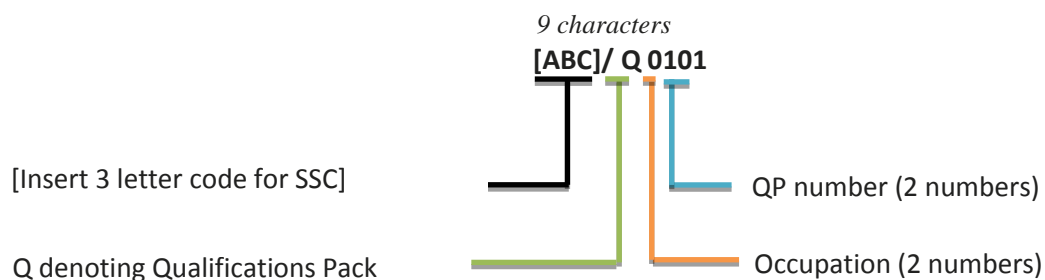
Acronyms

	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
PGM	Platinum Group Metals

Annexure

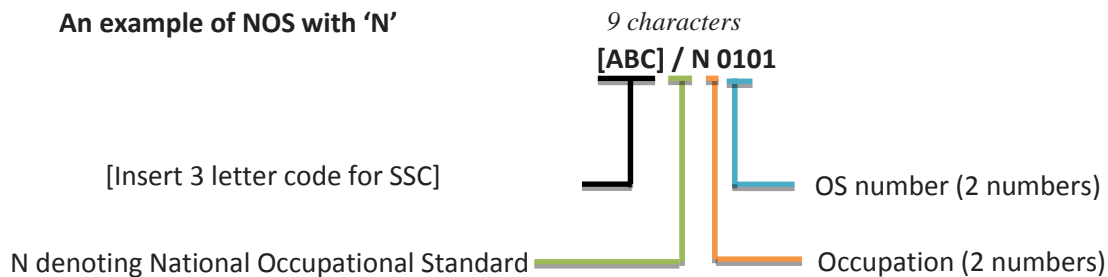
Nomenclature for QP and NOS

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 - Melter and Refiner
Qualification Pack Melter and Refiner
Sector Skill Council GEMS & JEWELLERY

Guidelines for Assessment:

1. To pass the Qualification Pack , every trainee should score a minimum of 50% in theory and 70% in practical assessments.

		Marks Allocation	
		Theory	Skills Practical
G&J/N0401 This OS unit is about recovering gold from jewellery pieces, scrap and dust and melting into pure gold or alloy	PC1. accurately compute proportions of mix of different solutions required for the amount of dust and scrap collected	1	8
	PC2. apply operating parameters required for different alloys	1	8
	PC3. make optimum recovery of gold and precious metals	0	8
	PC4. ensure no brittleness or colour streaks in alloyed metal or gold	1	6
	PC5. achieve zero impurities or ash on gold	0	4
	PC6. achieve zero accidents while handling chemicals and molten metal	1	4
	PC7. Plan well for optimum use of refining plant	0	6
	PC8. achieve total quantity of scrap and dust processed against target	1	7
	PC9. maximise percentage of gold recovered	1	7
	PC10. achieve purity of the recovered gold as per industry specified standards	1	6
	PC11. achieve minimal cracking, porosity and contamination	0	5
	PC12. achieve QC-okayed metal and no defects while remaking jewellery later	0	6
		7	75

G&J/N9910 This OS unit is about maintaining company's IPR and avoiding infringement on copyright of others	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
		3	0
G&J/N9912 This OS unit is about communicating with colleagues and seniors in order to maintain smooth and hazards free work flow	PC1. understand the work output requirements	2	0
	PC2. comply with company policy and rule	2	0
	PC3. deliver quality work on time as required by reporting any anticipated reasons for delays	0	3
		4	3
G&J/N9914 This OS unit is about being aware of and communicating potential hazards and dangers of accidents on the job	PC1. spot and report potential hazards on time	2	0
	PC2. follow company policy and rules regarding hazardous materials	2	0
	PC3. deliver quality work on time as required by reporting any anticipated reasons for delays	2	2
		6	2
		20	80

		100	
--	--	-----	--