# Assessment Mapping (for streamlined units from new Training Packages)

*This document is used to demonstrate content validity of the assessment tool*

Table 1 Main details

| Details | Unique description |
| --- | --- |
| **Unit Code, name and release number** | MSL973014 - Prepare working solutions (1) |
| **Skills Team** |  |
| **Region/Campus** |  |
| **SkillsPoint (owned by)** | Innovative Manufacturing, Robotics and Sciences |

*NOTES:*

* *Event columns can be added or deleted as required*
* *Rows for elements and performance criteria, etc. can be added or deleted as required*
* *Each component of the unit must be mapped to at least* ***one assessment criteria*** *or* ***question*** *in one or more assessment events*
* *Do NOT delete the section labelled Foundation Skills. If the Foundation skills ARE EXPLICIT in the performance criteria, they do not need to be listed. However, if the Foundation skills ARE NOT incorporated in the performance criteria they must be listed and mapped.*
* *Dimensions of Competency must be considered when selecting assessment types to ensure that the range of tasks you have chosen cover the following:*
  + *Task Skills*
  + *Task Management Skills*
  + *Contingency Planning Skills*
  + *Job Role Environment Skills*

## Unit component mapping to assessment event/s

Table 2 Unit component mapping to assessment event/s

| Element number | Element name | Performance criteria number | Performance criteria description | Learning resources | Knowledge Assessment1 of 2 | Skills Assessment: Solution Preparation 2 of 2 |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Make up working solutions | 1.1 | Identify the relevant standard methods for solution preparation |  |  | Observation checklist steps 2, 6 |
| 1.2 | Assemble specified laboratory equipment |  | Q17, 32 | Observation checklist step 8 |
| 1.3 | Select and prepare materials and solvent of specified purity |  | Q54 | Observation checklist step 9 |
| 1.4 | Measure appropriate quantities of reagents for solution preparation and record data |  | Q4, 5, 30 | Observation checklist step 10 |
| 1.5 | Prepare labels and log solution details in laboratory register |  | Q44 | Observation checklist step 11 |
| 1.6 | Transfer solutions to appropriately labelled containers |  |  | Observation checklist step 11 |
| 2 | Check existing stock of solutions | 2.1 | Monitor shelf life of working solutions and identify those that are unfit for use according to laboratory procedures |  | Q45, 55, 57 | Observation checklist step 15 |
| 2.2 | Replace out-of-date or reject solutions according to laboratory procedures |  | Q28, 45 | Observation checklist step 16 |
| 3 | Maintain a safe work environment | 3.1 | Use appropriate safety procedures and personal protective equipment (PPE) to ensure personal safety and that of other laboratory personnel |  | Q8 | Observation checklist step 1 |
| 3.2 | Store reagents and clean/store glassware and equipment in accordance with workplace procedures |  | Q7, 9 | Observation checklist step 13 |
| 3.3 | Minimise generation of waste and environmental impacts |  | Q10, 58 | Observation checklist step 9 |
| 3.4 | Clean up spills using appropriate techniques |  | Q46 | Observation checklist step 14 |
| 3.5 | Ensure the safe collection of laboratory and hazardous waste for subsequent disposal |  | Q10, 56 | Observation checklist step 14 |

## Foundation skills NOT explicit in the performance criteria

Table 3 Foundation skills NOT explicit in the performance criteria

| Foundation skills | Description | Learning resources | Knowledge Assessment  1 of 2 | Skills Assessment: Solution Preparation 2 of 2 |
| --- | --- | --- | --- | --- |
| Foundation skills essential to performance are explicit in the performance criteria of this unit | | | | |

## Performance evidence

Table 4 Performance evidence

| Performance evidence | Description | Learning resources | Knowledge Assessment  1 of 2 | Skills Assessment: Solution Preparation 2 of 2 |
| --- | --- | --- | --- | --- |
|  | There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and: |  |  |  |
| PE1 | Safely prepared at least 5 examples of correctly labelled working solutions, including calculation of the quantities involved and any dilutions required |  |  | Observation checklist step 1-12 |
| PE2 | Checked existing stocks of working solutions and identified those unfit for use. |  |  | Observation checklist steps 15, 16 |

## Knowledge evidence

Table 5 Knowledge evidence

| Knowledge evidence | Description | Learning resources | Knowledge Assessment  1 of 2 | Skills Assessment: Solution Preparation 2 of 2 |
| --- | --- | --- | --- | --- |
|  | There must be evidence the candidate has knowledge of: |  |  |  |
| KE1 | Concepts of metrology, including: |  |  |  |
| KE1.1 | * all measurements are estimates |  | Q18 |  |
| KE1.2 | * precision, accuracy and significant figures |  | Q1, 3, 40c, 40e, 40f, 43 |  |
| KE1.3 | * sources of error, uncertainty and repeatability |  | Q2, 40a, 40b, 40d, 42 |  |
| KE1.4 | * traceability |  | Q59 |  |
| KE2 | Working solutions |  | Q17, 32, 41, 44, 53 |  |
| KE3 | International system of units (SI) |  | Q38, 42 |  |
| KE4 | Concentration terms, such as % w/w, % w/v, % v/v, ppm (mg/L) and molarity |  | Q33, 34, 52 |  |
| KE5 | Basic theory of acids, bases, salts, buffers and neutralisation |  | Q22, 23, 24, 27, 35, 37 |  |
| KE6 | What affects solubility |  | Q19, 20 |  |
| KE7 | Difference between aqueous and organic solutions |  | Q21, 48 |  |
| KE8 | Periodic table, symbols of the elements, atomic weights, and difference between elements and compounds |  | Q11-13, 16, 26, 49, |  |
| KE9 | Chemical formulae |  | Q14, 15, 49 |  |
| KE10 | Workplace procedures for preparing solutions |  | Q31, 36, 44, 47, 54 | Observation checklist steps 6, 12, 17 |
| KE11 | Calculations required to prepare specified amounts of solutions of specified concentration |  | Q50a, 50c, 51 | Observation checklist step 3, 4, 5 |
| KE12 | Use of safety data sheets (SDS) and workplace procedures for preparing, handling and disposing of solutions and cleaning up spillages |  | Q6, 10, 44, 50b | Observation checklist step 7 |
| KE13 | Awareness of environmental sustainability issues as they relate to the work task |  | Q6 |  |
| KE14 | Legal, ethical and work health and safety (WHS) requirements specific to the work task. |  | Q10, 29, 39 |  |

## Assessment conditions

Table 6 Assessment conditions

| Assessment conditions | Description |
| --- | --- |
|  | Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:   * use of suitable facilities, equipment and resources, including:   + a standard laboratory equipped with appropriate reagents and equipment   + standard methods and workplace procedures   + containers and storage facilities.   Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors. |