

**RSU SOP 2021-17**

**PURCHASING SOURCE, ACCOUNTANCY, LABELLING & DISPOSAL  
(NOVEMBER 2021)**

University of Manchester 2021

**University of Manchester  
Radiation Safety Unit**



## RSU SOP 2021-17: Purchasing sources, labelling, accountancy and waste disposal

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### ACQUISITION OF RADIOACTIVE MATERIALS

|                               |   |
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| <b>Purchase</b>               | 1) Radioactive materials must be purchased through approved suppliers using the University purchasing / procurement system.   |
| <b>Acquisition</b>            | <p>2) Occasionally research workers may wish to receive materials from colleagues at other institutes, may be offered free samples, or may exchange labelled samples, etc. This permitted but such transfers must be approved by the Radiation Safety Unit (RSU) in advance.</p> <p>3) The movement of radioactive materials by public or private transport is subject to stringent national and international regulation. The RSU will assist in making transport arrangements <b>from</b> the University and issuing documentation as appropriate.</p>  |
| <b>How to order materials</b> | <p>4) Orders of radioactive materials must be placed using the University's central purchasing / procurement process.</p> <p>5) WHEN PLACING ORDERS LOOK FOR THE HAZARDOUS PROPERTIES SECTION AND TICK THE BOX FOR RADIOACTIVE. This will alert Purchasing to check that permission to purchase has been given by RSU and that there is 'space' on the Environmental Permitting Regulations (EPR) permit to hold the materials.</p> <p>6) The name and telephone of the person ordering, receiving and responsible for the material must be included on the purchase and delivery documentation.</p> <p>7) Think about when you want your materials to arrive and whether they need to be kept frozen. Anything arriving on a Friday could end up being quarantined over the weekend.</p> <p>8) <b>The flow chart appended to this document outlines the process.</b></p> |

|                                 |  |
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| <b>Receiving your materials</b> | <p>9) In most cases orders must be delivered directly to the ordering Department.</p> <p>10) As stated above, the name of the responsible PI or research student must be identified on the order documentation as being the person to receive the order.</p> <p>11) You must download the accountancy and water disposal record forms from the RSU website at &lt;ionising radiation / downloads&gt;.</p> <p>12) Other arrangements may exist for fissile materials and actinides.</p> |
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**SOURCE ACCOUNTANCY**

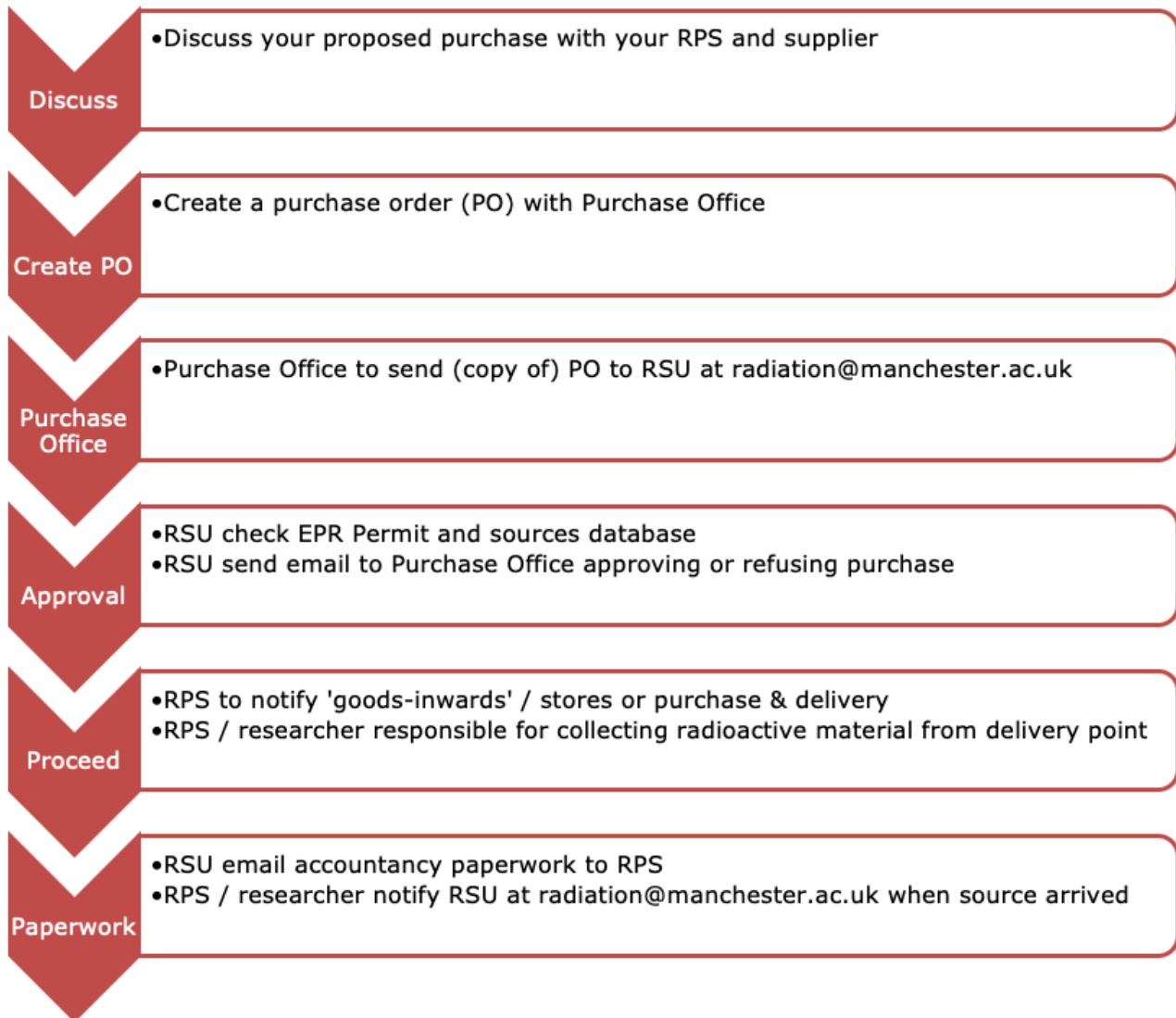
|                          |  |
|--------------------------|--|
| <b>Regulations</b>       | <p>13) The EPR consent requires the University to account for all radioactive materials held on Campus on a daily basis. Regarding your source, this means the amount of stock remaining, aliquots / samples removed, and waste disposed of. The Environment Agency makes frequent inspections and inspectors will look at your record systems to check that materials have been accounted for properly...and that the sums add up!</p>  |
| <b>What units to use</b> | <p>14) It is useful to note that the Agency requires source accounting to be in SI units, i.e. Becquerels or units thereof (Bq, kBq, MBq, GBq). Unfortunately sources are often ordered in Curies (Ci), in which case you will need to convert Curies to Becquerels.</p>   |
| <b>Accountancy</b>       | <p>15) Records of source usage are maintained by Departments. RSU holds a summary, which is updated from monthly records submitted to RSU by the Radiation Protection Supervisor (RPS)</p> <p>16) You must keep a record of the source details (isotope, activity, activity date) along with the source reference number.</p> <p>17) When you dispense activity you must record the activity taken from the source and update the remaining balance.</p> <p>18) If in any doubt about record keeping you should speak with your RPS.</p>   |
| <b>Labelling</b>         | <p>19) All sources and aliquots must be labelled with the radioisotope, activity, source reference number and date of receipt (sources) or aliquot.</p> <div style="text-align: center;">  <p><b>RADIOACTIVE</b><br/>i.d. DCF 15/001<br/>01/11/2015<br/>~2 GBq <sup>51</sup>Cr, <sup>60</sup>Co</p> </div> <p>20) Common should prevail...if you have a batch of aliquots or samples made up on one day keep them all together e.g. on a drip tray and mark the tray with the details.</p> |

**WASTE DISPOSAL**

|   |   |
|---|---|
| Waste disposal is covered in a separate information sheet, but a summary of the arrangements is given here. |   |
| <b>Aqueous</b>  | <p>21) Aqueous waste must be disposed of to a designated sink. Ecological / biodegradable scintillation fluids are also disposed of to a designated sink.</p> <p>22) Departmental limits are given in local lab permits.</p>  |
| <b>VLLW</b>   | <p>23) Solid waste arisings, tissues, laboratory consumables should be disposed of as general lab waste.</p> <p>24) Radioactive markings, trefoils, etc. should be removed and screwed up or rendered illegible (use a marker pen).</p> <p>25) Limits on VLLW disposals are:<br/> Tritium / carbon-14, 400 kBq per single item, and 4 MBq per 0.1 m<sup>3</sup> (one full waste sack),<br/> Beta / gamma emitters, 40 kBq per single item, and 400 kBq per 0.1 m<sup>3</sup>.</p> |
| <b>Solid waste for decay</b>  | 26) Waste arisings that comprise of short-lived radioisotopes having a half-life less than six months must be placed into black waste sacks that are then passed to RSU for storage until the radioisotopes have decayed.   |

**CONTACT DETAILS**

|   |   |
|---|---|
| <b>University Radiation Safety Unit (RSU)</b>                         | <p>Ian Haslam<br/>(Head of Radiological Safety)</p> <p>Hamza Al qasmi<br/>(Radiation Technical Adviser)</p> <p><a href="mailto:radiation@manchester.ac.uk">radiation@manchester.ac.uk</a></p>   |
| <b>Emergency contact</b>  | <p>27) In the event of an emergency contact the University Security Service at Precinct Control Room (PCR) of 52728 or 69966, and also inform the Radiation Safety Unit.</p> <p>28) PCR will put you in touch with an Emergency Incident Manager.</p>   |
| <b>Lost or stolen radioactive source (or suspected loss or theft)</b> | <p>29) If radioactive materials have been delivered, but cannot be found (lost or stolen) or if accountancy checks suggest materials have been lost or stolen this must be reported by RSU to the Environment Agency hotline without delay. Also, the PCR must be noted immediately.</p> <p>30) RSU will investigate and email preliminary findings to the Agency within 24 hours.</p> <p>31) Environment Agency incident hotline: 0800 80 70 60 (24-hour service).</p> |

**PROCESS FOR ORDERING RADIOACTIVE MATERIALS VIA PURCHASE OFFICE**

**Note:** With the exception of uranium salts for electron microscopy staining, the purchase of actinides (depleted uranium etc.) is not permitted without the prior written consent of the Head of Department and Radiation Safety Unit.