


















| Hazard Category | Nature of Hazard | Hazard Level | | |
|---|--|---|---|---|
| | | Low | Medium | High |
| HS100. Biological - Bacterial, viral, cells and tissue related  | HS101. Human Pathogens - Bacteria, Viruses, Fungi, Prions & Parasites Impacting on human health (as listed in ACDP Approved List) | Use of ACDP Hazard Group 1 | Use of ACDP Hazard Group 2 | Use of ACDP Hazard Group 3 |
| | HS104. Animal Pathogens - Impacting on animal health | Projects NOT requiring SAPO licence (unless they also impact on human health) | Use of SAPO Group 2 agents | Use of SAPO Group 3 agents and above |
| | HS105. Plants and Plant Pathogens, soil and related materials - Impacting on plant health | Plant projects assigned to Containment Level 1 | Plant projects assigned to containment level 2 (including the use of materials requiring a Plant Health Licence) | Plant projects assigned to containment level 3 |
| | HS106. Pathogens and Toxins - Potential for misuse (Anti-Terrorism, Crime and Securities Act) | X | Toxins not listed on Schedule 5, or listed but falls under an exemption | Schedule 5 listed substances |
| | HS107. Genetic Modification projects | Assessed as Class 1 Contained Use | Notified to HSE as Class 2 Contained Use | Notified to HSE as Class 3 Contained Use |
| | HS108. Larger GMO's | GM animals and plants posing no increased risk to human health or the environment. | Notifiable contained uses with GM animals or plants that pose an increased risk to human health and/or the environment | Activities with GM animals and plants (whether notifiable or not) that include high risk in other categories |
| | HS109. Clinical Samples Including Tissues, serum, blood etc. - Impacting on human health (which may or may not be classified under the Human Tissue Act) | Work with screened human samples | Work with un-screened human samples | Work with un-screened human samples where there is risk of highly infectious microorganisms |
| | HS110. Cell Lines | CL1 - Well characterised or authenticated finite or continuous cell lines of human, primate or animal origin with low risk of endogenous infection with a biological agent and which have been tested for | CL2 - Finite or continuous cell lines/strains of human or primate origin not fully characterised or authenticated except where there is high risk of endogenous | Containment level appropriate to agent or potential risk – Cell line with biological agents or cells that have been deliberately infected or primary cells from blood or lymphoid |








| Hazard Category | Nature of Hazard | Hazard Level | | |
|-----------------|---|--|--|--|
| | | Low | Medium | High |
| | | serious biological pathogens | biological agents e.g. blood borne viruses | cells of human or simian origin. |
| | HS111. Bio-reactors and Bio Manufacturing Work and Facilities | Small scale bio-manufacturing work with non-infectious organisms | Bio-manufacturing work | Large scale bio-manufacturing work with infectious microorganisms |
| | HS112. Allergenic biological materials | | | Materials that cause allergic reactions via skin contact and airborne routes |




| Hazard Category | Nature of Hazard | Hazard Level | | |
|---|--|---|---|--|
| | | Low | Medium | High |
| HS200. Chemical  | HS201. Drug Precursors - Due to their potential for misuse | Category 3 | Category 2 | Category 1  |
| | HS203. Substances covered by the Controlled Drugs Act | X | Schedules 2 to 5 substances | Schedule 1 substances  |
| | HS204. Substances covered by the Chemical Weapons Convention | X | Schedules 2 and 3 substances | Schedule 1 substances |
| | HS205. Substances Hazardous to Health | Hazard Group A examples include H303, H313, H320 H333 etc. simple controls following manufacturers information. | Hazard Group B and C substances requiring engineering controls or containment | Hazard Group D and E substances. Exposure has potential for fatal or irreversible debilitating health effects. This includes carcinogens. H310, H350, H351, H372, H373 or EUH070  1 |
| | HS206. Substances Hazardous to Health (Sensitisers) - Inhalation or skin contact | X | X | Substances or materials with H317, H334, EUH203, EUH204 or EUH208  |
| | HS207. Mutagens and Teratogens - hazardous to health and can cause heritable defects | X | X | Substances with H340, H341, H360, H361, H362  |
| | HS208. Substances - Poisons, potential for misuse | X | X | Poisons / highly toxic if inhaled, swallowed or skin contact – H300, H310, H330, EUH201, EUH207  |




¹ To identify significant corrosive materials, 'Is there regular or on-going storage of fuming nitric acid, other fuming acids, HF or other acids or bases which present a significant hazard in storage', if yes, the corrosive symbol is added to the lab notice board.


| Hazard Category | Nature of Hazard | Hazard Level | | |
|------------------------|--|--|--|--|
| | | Low | Medium | High |
| | HS209. Reactive Substances | Potential for slower changes | Water sensitive materials releasing flammable or toxic gas, or oxidising materials, H270, H271, H272  | Air sensitive materials; pyrophoric materials; substances with potential for thermal runaway or rapid volatilisation. H240, H250, H251   |
| HS200. Chemical | HS210. Substances Hazardous to the Environment | Contamination but no lasting harmful effect to air, land or water | Highly toxic, toxic or harmful to air, land or water. H400, H410, H411, H412, H413  | |
| | HS211. Nanomaterial`s - Potential health, environment and reactivity hazards | | Particles with one or more linear dimension $1\text{nm} < d < 100\text{nm}$, bound in an adhesive, liquid, solid or gel | Unbound particles with one or more linear dimension $1\text{nm} < d < 100\text{nm}$. Includes those generated by mechanical working of material. Carbon Nano-Tubes (CNTs) and other High Aspect Ration Nano materials (HARN`s) in any form   |
| | HS212. Explosives and detonable substances | Charge required for explosion | Substances which explode when working above STP (STP is defined as a temperature of 273.15 K (0 °C, 32 °F) and an absolute pressure of exactly 10 5 Pa (100 kPa, 1 bar)) | Self-detonating / igniting / exploding  |
| | HS213. Fire risks from Flammable Liquids | Flammable - Liquids with a flashpoint greater than or equal to 21°C and less than or equal to 55°C H226 | Highly Flammable - Liquids with a flashpoint below 21°C and above 0°C, H225 | Extremely Flammable - Liquids with a flash point below 0°C. H222/H224  |

| Hazard Category | Nature of Hazard | Hazard Level | | |
|-----------------|--|---------------|--|---|
| | | Low | Medium | High |
| | | |  | |
| | HS214. Fire and explosion risks from Gases and Gas Cylinders | Any cylinders | Oxygen enriching gases. H270  | Liquefied petroleum gases, Highly Flammable Gases including acetylene |
| | HS215. Health risks from Gases and Gas Cylinders | | Toxic gases, oxygen depleting liquids and gases (including Cryogenic gases and liquids) | Highly toxic gases |

| | | | | |
|---|---|--|--|---|
| HS300. Laser and Radiation      | HS301. Ionising Radiation – Sealed Sources | Security Category 5 sources including exempt sources: low radiation hazard | Radiation hazard requiring source accountability and Security Category 3 and 4 | High energy radiation: Security Category 1 (HASS) and 2 |
| | HS303. Ionising Radiation – Open Sources | | All others not mentioned in 'High' | High energy beta and gamma emitters e.g. 32P,125I |
| | HS304. Ionising Radiation – Equipment | | | X-ray generators |
| | HS305. Lasers | Class 1, Class 1M, Class 2 lasers | Class 1 laser product, Class 2M and 3R lasers | Class 3B and 4 lasers  |
| | HS306. Electromagnetic Radiation - Static Magnetic Fields | | Field strength 0.4 to 2 Tesla | Field strength > 2 Tesla  |
| | HS307. Electromagnetic Radiation in the frequency range 1Hz to 300GHz | | Non-ionising radiations at levels which exceed recommended exposure limits | Non-ionising radiations at levels which exceed recommended occupational exposure limits, and where individuals with active or passive implants, with body worn medical devices, or pregnant women are present or likely to be present |
| | HS308. Artificial Optical Radiation | | | Intense artificial light: brief exposure could cause harm to eyes or skin |

| Hazard Category | Nature of Hazard | Hazard Level | | |
|---|---|---|--|--|
| | | Low | Medium | High |
| HS400. Physical - Machinery or energy source related hazards | HS401. Mechanical Hazards - Associated with moving parts of work equipment and/or projectiles | Standard work equipment fitted with manufacturers guarding and appropriate certification or CE / UKCA marking | Non-standard work equipment fitted with Fixed or Interlocked guarding. Non-standard work equipment is any equipment which has been built or modified 'in-house' | Non-standard work equipment fitted with Automatic or distance guards, Adjustable guards or Trip devices, or that relies on other control measures |
| | HS403. Noise | >80dB(A); Repeated Impact noise >135dB(C) | >85dB(A); Repeated Impact noise >137dB(C)  | >87dB(A) (exposure limit); Repeated Impact noise 140dB(C)  |
| | HS404. Hand Arm Vibration - From hand held work equipment | Vibration magnitude of < 2m/s (e.g. standard drill) | Vibration magnitude of 2-4 m/s (e.g. brush cutters) | Vibration magnitude of > 4m/s e.g. petrol powered hand tools (e.g. chainsaws, angle grinders, sanders (random orbital), hammer drills, etc.) |
| | HS405. Whole Body Vibration - From mobile plant or larger equipment. | Exposure level below action value of 0.5 m/s ² A(8) | Exposure level above action value of 0.5 m/s ² A(8) | Exposure level potentially approaching the limit value of 1.15 m/s ² A(8) |
| | HS406. Electricity - Risk of personal injury from electrical equipment or electrical installations (fixed or temporary) | Work involving only the use of standard (CE / UKCA marked) mains powered equipment inside buildings. Modification, testing or repair of electrical systems or equipment which normally operate at Extra Low Voltage (below 50V ac or 120V dc) where there is the potential to come into contact with live parts | Standard (CE / UKCA marked) mains powered equipment used outdoors. Modification, testing or repair of electrical systems or equipment which normally operates at Low Voltage (between 50V ac and 1000V ac or between 120V dc and 1500v dc (ripple free)) where there is potential to come into contact with live parts | Work on or near any live conductor (other than one suitably covered with insulating material so as to prevent danger). Modification, testing or repair of electrical systems or equipment which might be, or might easily become, live. Work involving High Voltage (over 1000V ac or 1500V dc) where there is potential to come into contact with live parts  |

| Hazard Category | Nature of Hazard | Hazard Level | | |
|--|---|--|--|---|
| | | Low | Medium | High |
| HS400. Physical - Machinery or energy source related hazards  | HS407. Pressure Systems | Systems operating at greater than 0.5 bar but no more than 2 bar over atmospheric (1013 mbar) which is properly installed and maintained and used for its intended purpose and should not endanger persons or property | Installed or mobile system, plus safety devices, covered under a Written Scheme of Examination. Research project systems, not covered under a Written Scheme of Examination, but greater than 0.5 over atmospheric, that have been designed and constructed to 'sound engineering practice' (SEP) such that there are safety features built into the design (such as pressure reducing valves, safety valves, pressure relief and indicating devices) which should prevent an unintentional release of stored energy | Installed or mobile systems operating at or above 200bar. Any system involving steam stored at any pressure. Research project systems at 100 bar or above. Assemblies which have residual hazards where it is necessary to take appropriate special measures to reduce risks (e.g. the need for human intervention to prevent a hazard occurring) |
| | HS408. Vacuum | Any custom or 'in-house' built Low Vacuum systems. Any standard High Vacuum (HV) system | Any custom or 'in-house' built High Vacuum (HV) system. Any standard Ultra High Vacuum (UHV) system | Any vacuum used on volatile liquids and solvents, cold traps. Use with Liquid Nitrogen. Any custom or 'in-house' built Ultra High Vacuum (UHV) system |
| | HS409. Extreme Temperature - High or low temperatures | Use of point sources of heat, which could give rise to injury | Superheated liquids or super-cooled liquids. Use of high temperature furnaces (larger than bench top) or work in dedicated cold or dry rooms (where person access is required) |   |
| HS400. Physical - Machinery or energy source related hazards | HS410. Hydraulic Systems (under pressure) | Hydraulic system which forms part of a machine which is properly installed and maintained and used for its intended | Hydraulic system assembly which has been designed and constructed to meet industry-recognised safety standards, | |

| Hazard Category | Nature of Hazard | Hazard Level | | |
|-----------------|--|---|---|--|
| | | Low | Medium | High |
| | | purpose and as such should not endanger persons or property | (such as ISO 4413:2010) and as such have features built into the design (such as check valves, pressure relief and control valves) which should prevent an unintentional release of stored energy | the need for human intervention to prevent a hazard occurring) or where there are additional risks (like an assembly that uses a fluid with a low flashpoint which is used in proximity to hot surfaces) |
| | HS411. Lifting Equipment - Mechanical handling and lifting equipment, including jibs, hoists and cranes. | Use of hoists, jacks or mechanically assisted lifting devices | Use of powered lifting devices, including fork lifts or powered plant | Work involving gantry, mobile or tower cranes |
| | HS412. Hotwork - Work with heat sources including soldering, braising, welding or cutting. | Soldering or use of hot air guns | General heat treatment, braising or use of blow torches | Welding and cutting  |