NANOMATERIALS

1. Nanomaterials - as defined by the [European Commission (2011/696/EU)](#) – are:

> *Natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50% or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm.*
>
> *In specific cases, and where warranted by concerns for the environment, health, safety or competitiveness, the number size distribution threshold of 50% may be replaced by a threshold between 1 and 50%.*
>
> *By derogation from the above, fullerenes, graphene flakes and single wall carbon nanotubes with one or more external dimensions below 1 nm should be considered as nanomaterials.*

The [occupational use of nanomaterials](#) is regulated under the [Control of Substances Hazardous to Health](#) (COSHH) Regulations and of the [Dangerous Substances and Explosive Atmospheres](#) (DSEAR) Regulations.

The [UK NanoSafety Group](#) has developed [guidance](#) to support safe and responsible working practices with nanomaterials in research and development laboratories.

Before undertaking any work with engineered nanomaterials stringent risk assessments and controls are required to be approved by the Local Safety Coordinator.

2. Safe Handling and Control of Nanomaterials

Safe handling and control of exposure are important for managing the potential risks to health from nanomaterials. Several guides have been published. None of these guides can provide a definitive, step-by-step approach. However, they can help define good practice in most applications.

The general approach towards safe handling and control of nanomaterials is similar to that for other types on materials. The UK's Control of Substances Hazardous to Health Regulation (COSHH) outlines a framework that can be applied also to the control of nanomaterials:

- Identify the hazards and assess the risks.
- Decide what precautions are needed.
- Prevent or adequately control exposure.
- Ensure that control measures are used and maintained.
- Monitor the exposure.
- Carry out appropriate health surveillance.
- Prepare plans and procedures to deal with accidents, incidents and emergencies.
- Ensure employees are properly informed, trained and supervised.

Revision Record			
Issue	**Name**	**Date**	**Reason for review**
1	ES	31/5/2022	Transfer from main handbook