## Examples of control measures

ESA supports WISH (Waste Industry Safety and Health) guidance on [bioaerosols in waste and recycling](https://www.wishforum.org.uk/wp-content/uploads/2023/11/INFO-23-Bioaerosols-in-waste-and-recycling-V1-Oct-2023.pdf) which sets out relevant assessment and control measures and includes exposure guidelines to assist operators in the risk assessment process. ESA has produced examples of control measures as part of a suite of additional ESA bioaerosols resources to complement the WISH guidance:

### Process

* Avoiding (where possible) or otherwise minimising stockpiling of waste before processing to reduce growth of microorganisms.
* Reducing drop heights when moving waste.
* Avoiding unnecessary handling/tipping or double handling/tipping of waste.
* Automated waste sorting/separating.
* Wetting down (e.g. water mist) dry compost to suppress dust emission, caution must be taken as excess wetting may induce odour issues for organics (but ensure wetting is done under low pressure to prevent aerosol generation).
* Use of vacuums or damp methods to clean machines and surfaces instead of dry brushing or compressed air.
* Where compressed air is used reduce pressure to as low possible.
* Use of mains pressure hoses instead of pressure washers to clean whenever possible.
* Use of mechanical shovel loaders and manual scrapers/shovels to clear and clean floors.

### Engineering

* Extract ventilation of processing areas to increase air change rates.
* Local exhaust ventilation at sorting stations.
* Provision of suitably filtered operator control rooms.
* Enclosing entrances/exits to tipping chutes etc. with rubber/plastic curtains.
* Provision of HEPA filtered vehicle cabs. 

### Procedural / organisational

* Restricting access to high-risk areas (zoning).
* Arrangements for decontamination for personnel moving from high-risk to low-risk areas.
* Keeping doors and windows of vehicle cabs closed when tipping waste.
* Provision of sufficient welfare and washing facilities.
* Ensuring good personal hygiene practices are maintained.

### Maintenance

* Regular cleaning and disinfection of surfaces and floors (including vehicle cabs) to prevent growth of microrganisms.
* Provision of laundry facilities for coveralls by an external provider or on-site.
* Ensuring vehicle cab HEPA filters are checked according to an appropriate schedule, cleaned and replaced as per manufacturers recommended periods or no longer than every 500 hours of vehicle operation.

### Personal protective equipment (PPE)

* Provision of suitable PPE including gloves, overalls, footwear.
* Provision of suitable RPE e.g. FFP3 mask, powered respirator with P3 filter. (Note: Where tight-fitting RPE is worn workers will need to undergo a face-fit test.)

## Plastic recycling is a myth': what really happens to your rubbish? | Recycling | The GuardianExample: Cleaning underside of conveyor belts in a warm humid processing hall

Compressed air is often the only method of effectively clearing debris from intricate parts of machinery.

The increased likelihood of sweating should be considered in the selection of suitable Respiratory Protective Equipment (RPE) i.e. loose fitting instead of tight fitting around the face.

Apply all the following control measures:

### Process

* Reduce exit pressure of compressed air cleaning lances to as low as is required for effective cleaning (this will also reduce noise exposure).
* Minimise ‘trigger time’ when using compressed air.
* Use vacuum systems or other methods to remove debris where possible and when it is safe to do so.

### Procedural / organisational

* When using compressed air, ensure other workers are not in proximity or if they need to be there, ensure they are also wearing suitable RPE.

### Personal protective equipment (PPE)

* Provide powered RPE fitted with a P3 (particulate) filter.