



Key Recommendations

on good practice for handling polymer additives¹



Specialty chemicals are added to polymers, and other mixtures, to meet targeted physical and chemical property requirements. The Voluntary Emissions Control Action Programme, VECAP™, is a proactive and dynamic industry programme established to identify, control and reduce the potential for emissions of these polymer additives into the environment.

We have developed a few recommendations on handling and use of polymer additives that will help to both minimize the impact on the environment and maximize the benefits to your business.

Operational considerations

- Ensure as much as possible that all polymer additives end up in the polymer matrix.
- Store polymer additives and waste packaging in a designated closed building.
- Focus on empty packaging – the greatest potential for emissions of plastic additives is due to residues in waste packaging.
- In places where powder materials are handled, such as packaging lines or systems for loading reactor vessels, use of a local exhaust ventilation system when emptying polymer additives packaging is strongly recommended in order to minimise dust emissions.

General waste considerations

If some additives do not end up in the polymer and waste is generated, the solid wastes should always be collected and either incinerated or sent to controlled chemical landfill. Waste water should always be treated to remove the polymer additives in a treatment facility.

Empty packaging/potential emissions to land

The most significant potential emissions are due to residues left in the packaging. Powders tend to stick to the package walls or get trapped in the folds. Liquid plastic additives are often viscous and difficult to fully remove from packages.

- Try to minimize the amount of packaging used. In case of polymer additives delivered as powder, big bags are preferred and only use 20-25 kg paper or plastic bags if the process requires that size of package.
- Liquid polymer additives can be heated to help improve the flow of material out of the container. The internal surfaces can be scraped to more fully remove the product.
- Best practice guidance documents on empty bags or Intermediate Bulk Containers are available and can be provided (they are available both as posters or as brochures).

Potential emissions to air

The product form of most polymer additives is a fine powder that generates dust when the package is emptied. To avoid air emissions and unhealthy operating conditions, a ventilation system with a filter should be installed. The filter should be disposed of as chemical waste.

Potential emissions to water

Many polymer additives have a low solubility in water and do not degrade biologically in waste water treatment systems.

- Do not clean polymer additive spills with water. Dry cleaning is the preferred way for cleaning.
- Unavoidable waste water streams, for instance from rinsing the process baths,

should ideally be reused in the next production run and not sent to the waste water treatment plant.

- Do not mix waste water containing polymer additives with other waste water streams.
- Sludge resulting from a waste water treatment plant or system should be treated as chemical waste.

Training

Promote, maintain and record the environmental training programs. The best operational instructions and procedures will not result in operational success if the operators concerned are not aware of the environmental impact of the processes they operate. Promotion and awareness of the environmental training needs are essential.

1. This document is a summarised version of the Code of Good Practice (CoGP). This can be downloaded from the VECAP website on www.vecap.info

For further information:

Contact the VECAP Product Steward at info@vecap.info or visit www.vecap.info

VECAP is a voluntary initiative of member companies of the European Flame Retardants Association (EFRA) together with the industry's global organisation, the Bromine Science and Environmental Forum (BSEF).

