

GP Biotec Ltd
Great Porthamel, Talgarth,
LD3 0DL



Inventory of Waste Gas Streams (Procedure for
Treatment of Gases from Blood Storage Tanks and ABP
Hopper)

Introduction

This procedure forms part of GP Biotec's Environmental Management System and conforms to the requirement of BAT (3) to establish and maintain an inventory of wastewater and waste gas streams in order to facilitate the reduction of emissions to water and air.

At GP Biotec the main areas for potential risk of emissions to arise have been identified below.

- Blood storage tanks
- Animal by Product Hopper

1.0 Scope

This procedure defines the mechanisms in place for the treatment of gases from the areas identified above.

2.0 Responsibility

The Managing Director has the overall responsibility to ensure implementation of this procedure along with the support of the management team at GP Biotec.

3.0 Treatment of Gases

3.1 Carbon Filtration

The Carbon Filtration Unit located close to the liquid tank and identified as A4 on site map utilises a 3 MM non impregnated carbon. The treatment and removal of gases and odorous compounds within a Carbon filter starts with the transfer of contaminants from the air to the water phase, followed by adsorption to the medium or absorption into a water film, and finally biodegradation of contaminant within the biofilm.

The activated carbon has excellent structural properties from its water holding capacity and provides good surface for microbial attachment. GP Biotec uses sulfisorb plus impregnated activated carbon which is an enhanced impregnated activated carbon for acid gas removal. It has been developed to absorb hydrogen sulphide, organic mercaptans, general acid gases and many other odours.

The Carbon Filtration Unit attached to the Liquid Tank utilises this mechanism to trap gases such as Hydrogen Sulphide and Ammonia. The effectiveness of the biofilter is largely dependent on their characteristics such as porosity, degree of compaction, water retention capacity as well as the ability to host microbial population.

Ammonia is one of the main compounds responsible for generation of offensive odours. Removal of these gases using a biofilter serves the double effect of odour mitigation as well as treatment of the gases.

3.2 Gas Chiller

To control the release of ammonia and other gases especially during warmer temperatures, an ICS Cool Energy Chiller is in use permanently to mitigate gas releases.

4.0 Records

The twice daily site check includes monitoring of Hydrogen Sulphide gas at the Blood Storage Tanks. These records are kept in the site monitoring folder. All related records such as carbon filter and chiller maintenance records are also saved in the site folder.

Table 1.1 Inventory of gases and associated characteristics

Inventory of waste gas from blood storage tank	Characteristics of waste to be treated	Treatment procedure	Characteristics of waste gas stream	Average Concentration
Hydrogen Sulphide	Liquid	Carbon Filtration System	Colourless, Flammable, heavier than air	0
Ammonia	Gas	Carbon Filtration System	Colourless, Has pungent smell. Lighter than air	N/A

Inventory of waste gas from ABP Hopper	Characteristics of waste to be treated	Treatment procedure	Information about the characteristics of the waste gas stream	Average Concentration
Ammonia	Gas	Carbon Filtration System	Colourless, Has Pungent smell, lighter than air	N/A