Antifoam Selection Procedure

Fresh alkanolamine and glycol solutions do not foam. However, when the solution is put into service and contaminated with hydrocarbons or other impurities, the solution may have a tendency to foam. In these cases, antifoam may be used to treat the symptom. While it is recognized that some plants have operated successfully with continuous injection of antifoam, long term, it is best to treat the cause of the symptom and minimize the use of antifoams.

Three types of antifoam are available for amine and glycol service: polyglycol, silicon, and high molecular weight alcohols. Selecting the right antifoam to treat a plant problem is often a trial and error process. Generally, the polyglycols (Coastal 530 and 1017F are successful in a majority of the cases. The recommended level of polyglycol antifoam is 100 ppmw, not to exceed 400 ppmw in a day. Recommended silicons are Coastal Chemical 101 and 103. The recommended level of silicon antifoam is 10-25 ppmw, not to exceed 100 ppmw in a day. High molecular weight alcohols should be tried if polyglycol or silicon are not successful. It is our experience that antifoams containing both polyglycol and silicon should be avoided. In addition, be sure that the chosen antifoam is a water emulsion that does NOT contain a hydrocarbon carrier such as kerosene. Finally, be sure to check each manufacturers guideline on antifoam shelf life (generally six months for silicon antifoam, one year for polyglycols, and six to twelve months for high molecular weight alcohols).

Our antifoams include:

Coastal 530: Low cost non-silicon, organic polyglycol antifoam for amines and glycols and is not removed by activated carbon.

Coastal 1017 F: Higher viscosity polyglycol for amines and glycols and is usually more effective than 530, not removed by carbon. Often the best available product.

Coastal 101: Low cost commodity silicon antifoam for amines.

Coastal 103: A more stable silicon emulsion then 101. Works well for amines.

Silicon based antifoams are absorbed only slightly by carbon when the low recommended levels of antifoam are maintained. Only when systems are severely overdosed with silicon will carbon life be significantly reduced. It is noted that polyglycol based antifoams will pass through a typical 10 micron mechanical filter whereas silicon (typically about 12 micron size) will not. Silicon antifoams can blind typical mechanical filters not allowing the total use of all the surface area causing premature filter change-out. Silicon based antifoams are good antifoams but tend to precipitate out of solution in low velocity areas (trays, etc) and plug systems.

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