

Literature Review: Use & Environmental Impact of Amines

James Holoboff, Process Ecology Inc.

GL 15-ARPC-03

Improve understanding of the environmental and health impacts related to the use of amines in industry. Aqueous solutions of amines are widely used in sweetening systems for the removal of acidic gases. Alkaloamines are also the main viable candidate for Carbon Capture systems. These amine solvents react both within the process and once emitted to the environment.

Policy Issue

Improving air emissions inventories through improved emissions factors and reporting methodologies.

Knowledge Gap

Use & Environmental Impact of Amines (e.g., CCS, sour gas processing).

- a review of available emission factors to determine rates of release of amines (identify sector sources, are emission factors available, what is the quality of the emission factors, consider any levels of uncertainty and gaps);

- a review of available human health and environmental studies on amines and their degradation products;
- a review of available studies on the degradation rates, persistence, and fate of amines and their products in the environment (including gap identification);
- an investigation of what AAQO exist for amines and their degradation products in other jurisdictions.

Also, any gaps identified through this work could form the basis of future PTAC studies.

2015 Final Report