



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

December 6, 1999

OFFICE OF
ENVIRONMENTAL INFORMATION

Susan J.P. Flanagan
Counsel, Environment, Safety & Health
Institute of Makers of Explosives
1120 Nineteenth Street, NW. Suite 310
Washington, DC 20036

Dear Ms. Flanagan,

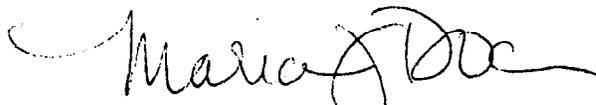
This letter is in response to the issue raised in your November 1, 1999 letter and at our meeting on November 9, 1999 concerning whether the emulsion-based explosives that your member companies manufacture are considered solutions of nitrate compounds under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). In your letter, and in the meeting discussions, arguments were made that emulsions are not solutions and as such are not covered by the following qualifier for the EPCRA section 313 listing for the nitrate compounds category: water dissociable; reportable only when in aqueous solution.

EPA disagrees with the statements that emulsions are not solutions and therefore do not meet the conditions of the nitrate compounds qualifier. In general, an emulsion is simply a mixture of two liquids that will not dissolve in each other and that will separate into two phases unless an emulsifying agent is added to maintain the emulsion. In the case of an emulsion where one of the phases is water, if the water phase contains dissolved nitrate compounds it would meet the EPCRA section 313 nitrate compounds qualifier since the water phase is an aqueous solution. This would be true regardless of whether the two phases of the emulsion separate or not.

However, the products that you have described, emulsion-based explosives, are not the simple emulsions discussed above. You stated that the emulsion-based explosive products contain 80-90% ammonium nitrate at ambient temperature. While such high concentrations are within the solubility limits of ammonium nitrate solutions at about 100 °C, the products in question maintain these concentrations at ambient temperature due to the presence of a specific emulsifier. Without the emulsifier that is added during the manufacture of these products such a high concentration of ammonium nitrate cannot be maintained at ambient temperature and, as you have indicated, such solutions would normally solidify. In this case the ammonium nitrate solution phase of these emulsion-based explosives is best described as, for lack of a better term, an "artificial solution" since the high ammonium nitrate concentration (80-90%) cannot be maintained at ambient temperature without the presence of the emulsifier. Therefore, EPA does not believe that the nitrate compounds present in these emulsion-based explosives meet the EPCRA section 313 qualifier for the nitrate compounds category.

I hope this information is helpful to you in complying with the reporting requirements of section 313 of EPCRA. If you have any other questions, or desire further information, please call either Daniel Bushman at 202.260.3882 or me at 202.260.9592.

Sincerely,

A handwritten signature in black ink, appearing to read "Maria J. Doa". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Maria J. Doa, Ph.D., Director
Toxics Release Inventory Program Division