



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Susan JP Flanagan
Institute of Makers of Explosives
1120 Nineteenth Street, N.W.
Suite 310
Washington, D.C. 20036-3605

Dear Ms. Flanagan:

This letter responds to your July 26, 1999 letter, in which you ask for guidance regarding the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). Specifically, you are asking for guidance about the applicability of the EPCRA section 313 reporting requirements to commercial explosives used by mining facilities. While your letter covers a number of issues, at this time the only issue that appears to demand guidance and clarification is your position on the qualifier for ammonium nitrate.

In particular, while you recognize that nitrate compounds are reportable when in "aqueous solution," you seem to believe that this qualifier has not been satisfied when the solution is contained within an emulsion. According to your letter:

Emulsion explosives consist of microscopic droplets of an oxidizer salt solution surrounded by a continuous external phase. This system is stabilized through the addition of an emulsifying agent. Slight modifications in the formulation result in a range of products from a putty like consistency to fluid, high viscosity, pumpable products. Since these are all water-in-oil emulsions they have excellent water-resistant properties. Unlike an aqueous solution, they are not miscible or readily soluble in water. If these materials are spilled they retain a discrete physical form and may easily be shoveled up and used as an explosive or blasting agent as originally intended.

As you are clearly aware, both ammonia and the nitrate compounds category are listed under EPCRA section 313 and both have a qualifier. For ammonia, the qualifier "includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing." Similarly, for nitrate compounds the qualifier reads, "water dissociable; reportable only when in aqueous solution."

With regard to the "aqueous" qualifier for ammonia, guidance makes clear that the term aqueous means "dissolved in water." In other words, the amount of water present must be sufficient to dissolve the ammonia. (See Q&A 450 in the 1998 EPCRA Section 313 Questions and Answers document; December 1998, EPA 745-B-98-004). For nitrate compounds, the qualifier "limits the reporting to nitrate compounds that dissociate in water, generating nitrate ion." (See Table II-2 in the 1998 Toxic Chemical Release Inventory Reporting Forms and Instructions; February 1999, EPA 745-K-99-001). And like the aqueous qualifier for ammonia, the aqueous solution qualifier for nitrate compounds means dissolved in water. If there is enough water present to dissolve ammonium nitrate then the qualifier for the nitrate compounds category has been met and the appropriate threshold determinations, release and other waste management calculations, and supplier notification requirements must be satisfied. All of the ammonium nitrate does not have to dissolve in the water, but only the amount that does dissolve should be included in threshold and release and other waste management calculations. Given the extremely high solubility of nitrate in water (e.g., 118.3g/100cc of water at 0 degrees C) it is extremely likely that if water is present then at least some of the nitrate will be dissolved. The fact that the ammonium nitrate in aqueous solution is in droplets embedded within an emulsion does not mean that the qualifier for nitrate compounds has not been met and that facilities do not have to comply with the EPCRA section 313 reporting requirements for this compound category. These droplets are solutions of ammonium nitrate and thus do meet the qualifier for the nitrate compounds category.

Finally, when facilities pump, pour, or inject the emulsion into or onto the ground, in order to otherwise use the toxic chemicals in the emulsion as an explosive, they are releasing these toxic chemicals. Accordingly, this otherwise use of the toxic chemicals in the emulsion constitutes a reportable release, and if the otherwise use threshold is exceeded for these chemicals, then Form Rs must be filed for them.

I hope this information helps to clarify the reporting requirements for EPCRA section 313. If you have any other questions, or desire further information, please call either Larry Reisman at 202.260.2301 or me at 202.260.9592.

Sincerely,



Maria J. Doa, Ph.D., Chief
Toxics Release Inventory Branch