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Donna E. Calabrese

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OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MEMORANDUM

SUBJECT: EPA Reg. No. 55947-144. Nitrosamine analysis of Sandoz's BARRICADE® F Herbicide [prodiamine] product. MRID 424123-01. D181171. CBRS 10314.

FROM: K. Dockter, Chemist *K. Dockter*
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Chemistry Branch II, Reregistration Support
Health Effects Division (H7509C)

THRU: A.R. Rathman, Head *ARR*
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TO: J. Miller / E. Wilson, PM Team 23
Registration Division (H7505C)

Sandoz Crop Protection Corporation has submitted a nitrosamine analysis for 55947-144 containing 2% prodiamine herbicide [N^3, N^3 -di- n -propyl-2,4-dinitro-6-(trifluoromethyl)- m -phenylenediamine]. Although a current label and CSF were not provided, data in our files indicate that this solid product is formulated as a dry mixture containing a urea/ammonium phosphate fertilizer [8/11/92 personal communication, R. Loranger].

The analysis was conducted on 7/17/92 in-house using Sandoz analytical method No. T-0307, dated 11/20/86, for N-nitrosodipropylamine (NDPA) in product 55947-144. Volatile nitrosamines were distilled from 3.50-g samples of batch #s 5108-66, 5121-81, and 5452-53C, produced on 6/21/90, 2/22/91, and 6/1/92, respectively using an ascorbate/mineral oil vacuum distillation method, and the distillates collected in a cold trap. Sodium ascorbate had been added to the samples prior to distillation to inhibit further nitrosamine formation. After the trap was warmed to room temperature, the aqueous phase was extracted with dichloromethane (DCM). The DCM extracts were made to a final volume of 10.0 mL with DCM. A 4- μ L aliquot of each extract was analyzed by GC-TEA. A sample of each batch was spiked with 0.1 μ g of N-nitrosodiethylamine (NDEA). Recoveries of 105, 99, and 107% were obtained. Samples of the oldest batch spiked with 1.8 and 0.18 μ g NDPA in addition to the 0.1 μ g NDEA spike gave recoveries of 80.4 and 100% NDPA.

We conclude that the method for NDPA is valid with a detection limit of ≤ 0.05 ppm. That contaminant is not detectable in product 55947-144; BARRICADE® F Herbicide.

cc: K. Dockter, R. Loranger, Nitrosamines SF, Circulate, RF.
RDI:ARRathman:8/11/92:MSMetzger:8/12/92:EZager:8/12/92
H7509C:CBRS:CM#2:RM804b:57886:KD/Kd:8/12/921