

[REDACTED]

ANALYTICAL RESEARCH DIVISION
RESEARCH DIRECTORATE

20 September 1984

Analysis/Evaluation of Yellow Powder

A shipment designated 10027Y(3), identified with TH830513-36CL, was received by the Analytical Research Division, 3 June 1983, from FSTC. The shipment was containerized with those designated 10027V(3), 10027W(3), 10027X(3) and 10027Z(3). [REDACTED] carrying the Registry No. C-115-83. The sample consisted of approximately 5 mg of yellow powder folded into a piece of paper in a plastic container from a charcoal sampler (Figure 1). (2)
63

A vapor sample withdrawn from within the plastic container was subjected to analysis by gas chromatography/mass spectrometry (GC/MS). A portion of the powder was extracted with chloroform. Another portion of the powder was extracted with 1:1 methanol:water. The solvent soluble materials were analyzed by GC/MS, ion chromatography (IC), thin layer chromatography (TLC) and infrared spectrometry (IR). The GC/MS spectra of the vapors associated with the yellow powder identified the presence of 1,2 dimethyl-4 (phenyl methyl) benzene as the major component, with aliphatic hydrocarbons including n-pentadecane, 5-phenyl decane, 6-phenyldecane and an unidentified compound M/Z = 71, 143, 242 as minor components. The GC/MS spectra of the chloroform solubles identified phenacetin as the major component with phenol, ethyl salicylate, caffeine and C₂₅ and C₂₇ aliphatic hydrocarbons as minor components. IC detected a possible trace of cyanide. TLC separated six components, one a visual dark spot, R_f 0.50-0.66. The others were detected by reaction with p-anisaldehyde yielding purple spots at R_f 0.30-0.39, 0.44-0.50, 0.80-0.91, 0.83-0.86 and beige at 0.58-0.66. The purple reaction products are similar to those detected in reference vegetation samples. The beige spot could be related to a trichothecene or similar structure. GC separations did not yield retention times matching beeswax. IR spectra indicated a very complex mixture including aliphatic hydrocarbons, two carbonyls with bands at 1715 and 1730 cm⁻¹, possible nitrates, aromatics, C-O and phosphoryl. Due to the overlay of bands, positive identification was virtually impossible for these components.

Conclusions:

No evidence of any known CW agent, agent degradation product or trichothecene was detected. The phenacetin detected is used as an analgesic and antipyretic. The ethyl salicylate and phenol are normal components of the marketed analgesic mixture.

Classified by: CIA

[REDACTED]
Declassify: OADR



FIGURE 1

